



NPIU
National Project Implementation Unit



SOUVENIR

INTERNATIONAL CONFERENCE ON "MATHEMATICAL MODELING AND HIGH PERFORMANCE COMPUTING IN SCIENCE AND TECHNOLOGY"

12th – 13th February, 2020



Sponsored by

TE@IP-III

Rajiv Gandhi Pradyogiki Vishwavidyalaya Bhopal, (Madhya Pradesh)

Accredited with 'A' grade by NAAC

In Association with

Jawaharlal Nehru Technological University, Hyderabad (Telangana)

Accredited with 'A' grade by NAAC

Organized by

**Department of Engineering Mathematics
Lakshmi Narain College of Technology & Science**

Kalchuri Nagar, Raisen Road, Bhopal 462 022, Madhya Pradesh

www.Lnct.ac.in

CHIEF PATRON

Prof. Sunil Kumar

Hon'ble Vice Chancellor RGPV, Bhopal

Shri Jai Narayan Chouksey

Hon'ble Chancellor LNCT, University, Bhopal
& Chairman LNCT Group of Colleges, Bhopal

PATRONS

Mrs. Poonam Chouksey

Vice Chair Person, LNCT Group of Colleges, Bhopal

Dr. Anupam Chouksey

Secretary, LNCT Group of Colleges, Bhopal

Mrs. Shweta Chouksey

Director, LNCT Group of Colleges, Bhopal

CONVENER

Dr. Ashok Kumar Rai

Director, Administration, LNCT, Bhopal

COORDINATOR

Dr. Sanjeet Kumar

Professor & Head (Mathematics), LNCT&S, Bhopal

Dr. T. Venugopal

Professor & Head (Computer Science Engg.) JNTU, Hyderabad

CO-COORDINATORS

Dr. M. A. Srinivas

Professor (Mathematics), JNTU, Hyderabad

Dr. Reema Tuteja

Professor & Head (Mathematics), LNCT, Bhopal

Dr. Bhupesh Gour

Professor & Head, (CSE) LNCT, Bhopal

Dr. Bhupendra Tripathi

Professor (Mathematics) LNCT&S, Bhopal

ADVISORY COMMITTEE

Dr. Suresh Singh Kushwah.

Registrar, RGPV, Bhopal

Dr. S.C. Choube,

Coordinator TEQIP-III, RGPV, Bhopal

Dr. B. Padmaja Rani,

Coordinator TEQIP-III, JNTU, Hyderabad

Dr. N. K Thapak

Vice Chancellor, LNCT, University, Bhopal

Dr. O.P. Rai,

Advisor, LNCT Group of Colleges, Bhopal

Dr. K.N. Srivastava,

Principal, LNCT, Bhopal

Dr. A. K. Sachan,

Principal, LNCT&S, Bhopal

Dr. V.K Sahu,

Principal, LNCTE, Bhopal

Dr. A.K. Singhai,

Principal, LNCP, Bhopal

Dr. Sanjay Bajpai,

Director, LNCT (MCA), Bhopal

Dr. A. N. Sinha,

Director, Academics, LNCT Group , Bhopal

Dr. Anuj Garg

Director, T&P, LNCT Group , Bhopal

Dr. Amit Bodh Upadhyaya,

OSD, LNCT&S, Bhopal

Dr. Sunil Kumar Singh,

OSD, LNCTE, Bhopal

Dr. Sanjeev Kumar,

Dr. B.R. Ambedkar University, Agra

Dr. Sunder Lal, Former, V.C,

V.B.S. Purvanchal University, Jaunpur

Dr. Manu Pratap Singh,

Dr. B.R. Ambedkar University, Agra

Dr. Manju Singh, RGPV, Bhopal

Dr. Vijay Kumar Gupta, RGPV, Bhopal

Dr. Anil Goyal, RGPV, Bhopal

Dr. Manoj Pandey, RGPV, Bhopal

Dr. Piyush Shukla, RGPV, Bhopal

Dr. Rajeev Pandey, RGPV, Bhopal

Dr. N. P. Pahari,

Tribhuvan University, Kathmandu, Nepal

Dr. Vijay Vir Singh,

Ysuf Maitama Sule University, Nigeria

Dr. Jomar Fajardo Rabajante,

University of The Philippines, Philippines

Dr. Mohammad Israr, Sultanate of Oman

Dr. Dirk Poelman, Ghent University, Belgium

Dr. Vijay Singh,

Konkuk University, South Korea

Dr. H.M. Srivastava,

University of Victoria, Canada

Dr. Rajesh Shrivastava,

Govt Sci. & Comm. Benazeer College Bhopal

Dr. R. S. Chandel,

Govt. Geetanjali Girls' P.G. (Auto.) College, Bhopal

Dr. Ramesh Chandra Panda, Dhenkanal, Orissa

Dr. Mukesh Kumar Rohil, BITS Pilani, Pilani

Dr. S. Suresh Kimar, JNTU, Hyderabad

Dr. Pramod Kumar Mishra, BHU, IIT, Varanasi

Dr. Satya Deo, HRI, Allahabad

Dr. U.C. De. University of Calcutta, Kolkata

Dr. Praveen Agrawal, HRI, Allahabad

Dr. Pankaj Shrivastava, MNNIT, Allahabad

Dr. C.K. Sharma, A.P.S. University Rewa

Dr. SK. Safique Ahamad, IIT, Indore

Dr. Gajendra K. Vishwakarma, ISM, Dhanbad

Dr. K.R. Pardasani, MANIT, Bhopal

Dr. Madhvi Shakya, MANIT, Bhopal

Dr. R.S. Thakur, MANIT, Bhopal

Dr. Deepak Singh Tomar, MANIT, Bhopal

Dr. Prashant V Baredar, MANIT, Bhopal

Dr. Neeru Adlakha, SVNIT, Surat

Dr. Pankaj Mishra

AMITY University, Gwalior

Dr. Ramakant Bhardwaj,

AMITY University, Kolkata

Dr. M.A. Pathan,

Aligarh Muslim University Aligarh

Dr. Sunil Kumar, NIT, Jamshedpur

Dr. R.C. Chandel, D.V. P.G. College, Orai, U.P.

Dr. P.K. Banerjee,

Jodhpur University, Jodhpur (RAJ)

Dr. Madhu Jain, IIT, Roorkee

Dr. Ravi Shankar Singh,

IIT, BHU, Varanasi (U.P).

Dr. R.S. Jadaun, MITS, Gwalior.

Dr. Nilay Khare, MANIT, Bhopal

Dr. Geeta Modi, MVM, Bhopal

Dr. Anil Rajput,

C.S. Azad Govt. P G Nodal College, Sehore (M.P.)

ORGANIZING COMMITTEE

Dr. Rajesh Kumar Sakale

Dr. Vandana Pandey

Dr. Sumit Pratap Singh

Dr. Rituja Nighojkar

Dr. Mayank Sharma

Dr. Roshni Sharma

Dr. Kirti Verma

Dr. Akanksha Mishra

Dr. Ajay Soni

LOCAL ORGANIZING COMMITTEE

Dr. Manish Khemariya

Dr. Vineet Richhariya

Dr. Anoop Kumar Chaturvedi

Dr. Manish Shrivastava

Dr. Sadhna Mishra

Dr. Vivek Richhariya

Dr. Rachna Dubey

Dr. Sunil Phulre

Dr. Megha Kamble

Dr. Ashish Khare

Dr. Verendra Kumar Tiwari

Dr. Neel Rai

Dr. Soni Changlani

Dr. Soheb Munir

Dr. Bharti Gupta

Dr. Mukul Shrivastava

Dr. Naveen Agrawal

Dr. Shankar Kumar

Dr. Versha Parmar

Dr. Meetoo Singh

Dr. Sangeeta Kapoor

Dr. Prabodh Sahai Saxena

Dr. Ashim Jain

Dr. Anjali Tiwari

Dr. Lisha Kurup

Dr. Arti Malviya

Dr. Pratibha Sharma

Dr. Renu Shrivastava

Dr. Pooja Saxena

Dr. Deepika Agrawal

Dr. Brijesh Verma

Dr. Govind Nayak

Dr. Amit Nayak

Dr. Shailendra Dwivedi

Dr. Madan Mohan Sahu

Dr. Rajendra G. Patil

Dr. Anil Singh Yadav

Dr. Vikas Pare

Dr. Vipin Shrivastava

Dr. Yogesh Dewang

Dr. V. N. Bartaria

Dr. Neeraj Dubey

Dr. T Ravi Kiran

Dr. Arun Kumar Wamankar

Dr. Shubha Agrawal

Dr. Anil Ku. Saxena

Dr. Sushil Kumar Mittal

Dr. Praveen Kumar Singhai

Dr. Soumitra Chakraborty

Dr. Amit Shrivastava

Dr. Sachin Tiwari

Dr. Anand Singh

Dr. Amol Barve

Dr. Anwar Ahmad Ansari

Dr. K.N. Shukla

Dr. Manju Khare

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL

Accredited with 'A' grade by NAAC



Rajiv Gandhi Proudhyogiki Vishwavidyalaya (RGPV), accredited with 'A' grade by NAAC, established in the year 1998 is truly a picture of modernization offering learner-centric programmes in Engineering, Pharmacy, Architecture & Management. University is sprawled over a vast campus of 241.4 acres, marching towards development into a center of excellence in the arena of Technical Education, Research and Innovations.

Under its umbrella there are 05 UTD's 188 affiliated Engineering Colleges, 69 Pharmacy Colleges, 25 MCA Colleges and 05 Architecture colleges imparting Graduate level instructions running 23 under graduate level courses & 84 post graduate level courses. Situated amidst an aesthetic and hilly surrounding the University is offering Ph.D. in eight faculties. RGPV has been selected by Ministry of Human Resource Development (MHRD) as one of the Affiliating Technical Universities (ATUs) among ten across the country for receiving TEQIP-III grant. The main objective of Faculty Development Programme (FDP) is to improve quality and equity in engineering teachers in order to up-grade the knowledge, enhancing research and teaching skills.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD (TELANGANA)

Accredited with 'A' grade by NAAC



Jawaharlal Nehru Technological University, Hyderabad, was established on 2nd October 1972 by the Legislature of the State of Andhra Pradesh as the first Technological University in the country. After 36 years of existence it was restricted into 4 different Universities by the Government vide Government Ordinance No.30 dated September 2008 and this new University has been designated as Jawaharlal Nehru Technological University Hyderabad (JNTUH). It has been in the forefront for the past 44 years in providing quality technological education and situated in a sprawling 89-acre campus at Kukatpally,

Hyderabad. It has now Four Constituent Engineering Colleges and 15 other constituent units in Hyderabad campus.

JNTUH offers B.Tech. programmes in 21 disciplines and B.Pharm at UG level; Integrated 5-year dual degree Masters programme; M.Tech. Programmes in 68 disciplines, M.Pharm. in 11 disciplines; M.Sc. in 4 disciplines; MCA, MBA and Double Degree Programmes at P.G. level; in addition to M.S., M.Phil., Ph.D. Research Programmes in various disciplines of Engineering, Technology, Science, Management and Humanities. JNTUH has 300 affiliated colleges spread over the Telangana State. JNTUH has more than 3.50 lakhs students on rolls. The University has Memoranda of University with many National and International organizations. JNTUH is identified as TEQIP-III University under subcomponent 1.3ATU.

LNCT GROUP OF COLLEGES



LNCT Group of Colleges is one of the oldest and largest educational group in central India. Founded in 1994 Lakshmi Narain College of Technology, Bhopal has the privilege of being the First Private (self financed) institute of M.P., LNCT Group offers program from Diploma, Bachelor, Master's and Doctorate level programs. With campuses in five locations in Madhya Pradesh &

Chhattisgarh including the cities of Bhopal, Indore, Gwalior, Jabalpur and Bilaspur to meet the ever increasing demands of higher education in central India, LNCT Group is one of the largest Group central India to offer programs in field of study: Engineering, Management, Pharmacy, Medical, Homeopathy, Dental and professional studies. This includes the students a feeling of responsibility and concern and makes them comprehend the world a bit better. Each one is better endowed to face the world and the satisfaction of having fulfilled their social responsibility is an added bonus.

The L. N. Medical College & Research Centre located at Bhopal, MP. It is a part of LNCT Group of College, which are runs a hospital with 750 Beds and Medical courses affiliated with Barkatullah University, All group institutions have the finest relations among the industry and academics. Today, prospective students will find 58 undergraduate, graduate as well as post graduate programs. People who wish to pursue a career in Engineering, Management, Pharmacy, Medicine, Dentistry and Nursing.

ABOUT ORGANIZING INSTITUTE & DEPARTMENT



Lakshmi Narain College of Technology & Science, Bhopal is devoted to excellence in teaching, research and innovation and to develop leaders who will make a difference to the world. LNCT&S, which is based in Bhopal since 2006. The record breaking placement at LNCT&S is an apt testimony to its focus on upholding the highest academic standards right from selecting top faculty, introducing world class pedagogical practices to personality development to the students.

The department of Engineering Mathematics, one of the vibrant department of the institution, established in the year 2006. Department functions as a service agency providing support to UG inculcate analytical skills in mathematical sciences so as to enable the students to apply and formulate in solution making approaches of their technical subjects. Definitely the learning of mathematics will enhance and widen the mathematical aptitude, analytical skills, logical reasoning and systematic thinking of the students.

ABOUT BHOPAL



Bhopal, capital city of Madhya Pradesh, is known as city of lakes. Founded by Raja Bhoj, the city has many natural and artificial lakes and it is one of the greenest cities in the country. The main cultural center of Bhopal is Bharat Bhavan. The State Museum has fossils, paintings and rare Jain sculptures. Taj-ul-Masjid is one of Asia's largest mosques, with white domes, and minarets. Van Vihar National Park, located in the middle of the city, has many species of animals living in their natural habitat. A large number of institutes of national importance have been

established in Bhopal. Climate of Bhopal is pleasant in the month of November.

ABOUT INTERNATIONAL CONFERENCE

The purpose of this international conference is to discuss recent findings and new emerging trends in the field. It is intended to promote fruitful collaboration between various communities and institutes by bringing together a small number of scientists in inspiring surroundings. Some priority is given to young scientists to orally present and defend their own work. This will be a great opportunity for budding researchers particularly in the local region to explore the new aspects and global relations.

They would get ample scope to exchange views and thoughts besides presenting their research. The conference aims to provide a common platform to researchers working in various sub-disciplines of the theme.

Course Objective

The course objective of this international conference is to bring together leading researchers and academics in the field of applied mathematics and engineers in order to debate current and interdisciplinary topics in mathematical modelling and high performance computing and their applications in science. The aim of this conference is to promote the interconnection of mathematical modeling, and High performance computing used in solving complex (real-world) problems. The lectures will be prepared with a broad multidisciplinary audience in mind, and ranging from modeling to scientific computing, will be covered. All submitted papers will be peer-reviewed by referees and accepted papers with great quality will be published in **International Journal of Scientific Research in Mathematical and Statistical Sciences (UGC Approved, Journal No. 63061)**.

Main topics: Mathematical modelling and High-Performance Computing in Science and Technology is a premier international conference on topics at the confluence of high performance and large scale computing systems, their use in modeling and simulation, their design, performance and use, and their impact, and related issues.

- ◆ Mathematical modeling the future Internet and developing future Internet security technology
- ◆ High Performance Computing (HPC)
- ◆ Mathematical Models and Information-Intelligent Systems on Transport
- ◆ Computational Methods for Linear and Nonlinear Optimization
- ◆ Numerical Methods for Solving Nonlinear Problems
- ◆ Bio-mathematics
- ◆ Mathematical Models for Computer Science
- ◆ Industrial Mathematics
- ◆ Mathematical Models for Computer Science
- ◆ Computational Modeling in Engineering and Science
- ◆ Mathematical modelling of Man-made Natural disasters: forest fire & environmental pollution
- ◆ Numerical Linear Algebra Methods for Large Scale Scientific Computing
- ◆ Machine Learning Techniques in Bioinformatics
- ◆ Processing, modelling, and describing time series

जीतू पटवारी

मंत्री,

खेल एवं युवा कल्याण, उच्च शिक्षा,
मध्यप्रदेश शासन



कार्यालय भोपाल :

डी-13, 74 बंगला, भोपाल (म. प्र.)

दूरभाष क्र. : 0755-2441620, 2446227

जावक क्र. 785.....

दिनांक 03/02/2020.....

MESSAGE

It gives me immense pleasure to know that the Department of Engineering Mathematics, Lakshmi Narain College of Technology & Science, Bhopal, is Organizing **"International Conference on Mathematical Modeling and High Performance Computing in Science and Technology (ICMMHPCST-2020)"** sponsored by TEQIP-III, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal (Madhya Pradesh) and in association with Jawaharlal Nehru Technological University, Hyderabad (Telangana) on February 12-13, 2020.

A galaxy of scientists and mathematicians, not only in India but across the globe, are coming to attend the International Conference.

I extend my best wishes to participants, members of managing committee and organizers of the International Conference (ICMMHPCST-2020) a grand success and also for the successful publication of the Souvenir and in all its future endeavors.

(Jitu Patwari)

कार्यालय इन्दौर : मेन रोड बिजलपुर, राजेन्द्र नगर थाने के सामने, ए. बी. रोड, इन्दौर (म. प्र.)—452012

टेलीफैक्स : 0731-4983133

ई-मेल : highedu.ministrymp@gmail.com / sports.youthministrymp@gmail.com



Prof. Sunil Kumar
Vice-Chancellor

राजीव गांधी प्रौद्योगिकी विश्वविद्यालय
(मध्यप्रदेश का तकनीकी विश्वविद्यालय)
Rajiv Gandhi Prodyogiki Vishwavidyalaya
(State Technological University of Madhya Pradesh)

Do Letter No. *RGPV/VCO/2020/19.*
दिनांक/Date *27-01-2020*

MESSAGE

It gives me immense pleasure to learn that Department of Engineering Mathematics, **Laxmi Narayan College of Technology and Science, Bhopal** under the sponsorship of TEQIP-III, Rajiv Gandhi Prodyogiki Vishwavidyalaya, MP is organizing an International Conference on “**Mathematical Modeling and High Performance Computing in Science and Technology (ICMHPCST -2020)**” on February 12-13, 2020.

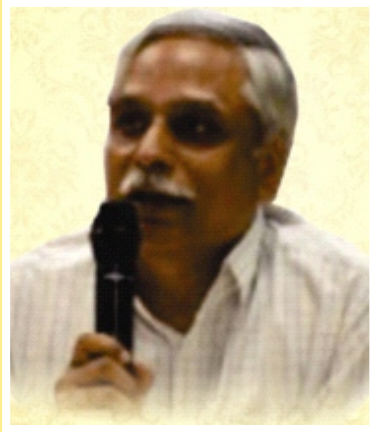
Mathematics is the backbone for the development of scientific and technical fields, scientific computing, the thrust area provides the basis for all round development of humanity and improvement of its well being.

I hope this Conference will provide a forum for interaction of researchers in the field of mathematical science, computer science and interdisciplinary researchers.

I am glad that **Laxmi Narayan College of Technology and Science, Bhopal** is providing the opportunity to large number of professional, academicians and researchers to generate high level of intellectual deliberations and would inspire younger scientists and faculty to go to greater heights.

My warm greetings to the organizers and wish the Conference all success to achieve its desired goals.

(Prof. Sunil Kumar)



Dr. S.C Choube

Coordinator TEQIP-III

Rajiv Gandhi Proudyogiki Vishwavidyalaya
Bhopal (M.P.)

MESSAGE

It's delightful to learn that the Department of Engineering Mathematics, Lakshmi Narain College of Technology & Science, Bhopal, is Organizing “**International Conference on Mathematical Modeling and High Performance Computing in Science and Technology (ICMMHPCST-2020)**” sponsored by TEQIP-III, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal (Madhya Pradesh) in association with Jawaharlal Nehru Technological University, Hyderabad (Telangana) on February 12-13, 2020.

Mathematics is the backbone for the development of scientific and technical fields. Scientific computing, the thrust area provides the basis for all round development of humanity and improvement of its well being. This conference will provide a forum for interaction of Researchers in the field of mathematical science, computer science and Interdisciplinary Researchers.

I extend my best wishes to participants, members of managing committee and organizers of the **ICMMHPCST-2020** a grand success and also for the successful publication of the Souvenir and in all its future endeavors.

A handwritten signature in black ink, appearing to read 'S.C. Choube', with a horizontal line underneath.

(Dr. S.C. Choube)



Jai Narayan Chouksey
Chancellor LNCT, University, Bhopal
&
Chairman LNCT Group of Colleges, Bhopal

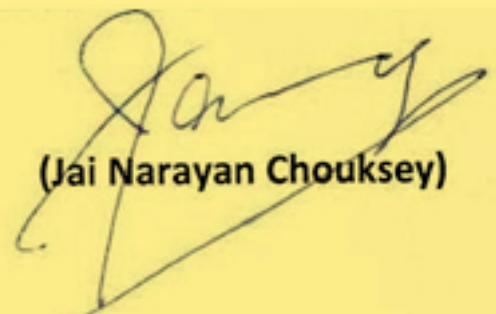
MESSAGE

It's delightful to learn that the the Department of Engineering Mathematics, Lakshmi Narain College of Technology & Science, Bhopal, is Organizing “**International Conference on Mathematical Modeling and High Performance Computing in Science and Technology (ICMMHPCST-2020)**” sponsored by TEQIP-III, Rajiv Gandhi Proudhyogiki Vishwavidyalaya, Bhopal (Madhya Pradesh) in association with Jawaharlal Nehru Technological University, Hyderabad (Telangana) on February 12-13, 2020.

“**ICMMHPCST-2020**” is successive efforts in the series of Mathematical Modeling and High Performance computing for the enhancement of knowledge and interest of one and all n research scholar and faculty members.

This conference is serving as an open platform for promoting and upbringing knowledge in the relevant area.

I heartily wish for the success of this conference and hope that all those are associated with this venture may achieve the most out of it.



(Jai Narayan Chouksey)



Poonam Chouksey
Vice- Chair Person
LNCT Group of Colleges, Bhopal

MESSAGE

I am pleased to know that the Department of Engineering Mathematics, Lakshmi Narain College of Technology & Science, Bhopal, is Organizing **“International Conference on Mathematical Modeling and High Performance Computing in Science and Technology (ICMMHPCST-2020)”** sponsored by TEQIP-III, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal (Madhya Pradesh) in association with Jawaharlal Nehru Technological University, Hyderabad (Telangana) on **February 12-13, 2020.**

The topics to be covered in this International Conference are comprehensive and will be adequate for developing and understanding about new developments and emerging trends in this area. I hope the goal of the conference is to update the knowledge of faculty members, young researchers and PG students. I shall be glad to receive a path forward drawn from the conference.

I congratulate the organizers for taking this initiative and extend my best wishes for the successful conduction of event.


(Poonam Chouksey)



Dr. Anupam Chouksey
Secretary,
LNCT Group of Colleges, Bhopal

MESSAGE

I am pleased to know that the Department of Engineering Mathematics, Lakshmi Narain College of Technology & Science, Bhopal, is Organizing **“International Conference on Mathematical Modeling and High Performance Computing in Science and Technology (ICMMHPCST-2020)”** sponsored by TEQIP-III, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal (Madhya Pradesh) and in association with Jawaharlal Nehru Technological University, Hyderabad (Telangana) on **February 12-13, 2020.**

The topics to be covered in this International Conference are comprehensive and will be adequate for developing and understanding about new developments and emerging trends in this area. I hope the goal of the conference is to update the knowledge of faculty members, young researchers and PG students. I shall be glad to receive a path forward drawn from the conference.

I congratulate the organizers for taking this initiative and extend my best wishes for the successful conduction of event.

(Dr. Anupam Chouksey)




Shweta Chouksey
Director
LNCT Group of Colleges, Bhopal

MESSAGE

I am pleased to know that the Department of Engineering Mathematics, Lakshmi Narain College of Technology & Science, Bhopal, is Organizing **“International Conference on Mathematical Modeling and High Performance Computing in Science and Technology (ICMMHPCST-2020)”** sponsored by TEQIP-III, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal (Madhya Pradesh) in association with Jawaharlal Nehru Technological University, Hyderabad (Telangana) on **February 12-13, 2020.**

The topics to be covered in this International Conference are comprehensive and will be adequate for developing and understanding about new developments and emerging trends in this area. I hope the goal of the conference is to update the knowledge of faculty members, young researchers and PG students. I shall be glad to receive a path forward drawn from the conference.

I congratulate the organizers for taking this initiative and extend my best wishes for the successful conduction of event.


(Shweta Chouksey)



Dr. Ashok Kumar Rai

Director, Administration, LNCT, Bhopal
Conference Convener (ICMMHPCST-2020)

MESSAGE

It is the matter of great pleasure and pride that the Department of Engineering Mathematics, Lakshmi Narain College of Technology & Science, Bhopal, is Organizing “**International Conference on Mathematical Modeling and High Performance Computing in Science and Technology (ICMMHPCST-2020)**” sponsored by TEQIP-III, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal (Madhya Pradesh) and in association with Jawaharlal Nehru Technological University, Hyderabad (Telangana) on **February 12-13, 2020**.

This conference brings together leading academicians, scientists & researchers to exchange and share their experiences and research results in all aspects of Mathematical Modeling and High Performance Computing. It also provides a premier interdisciplinary platform for researchers, practitioners and educators to present and discuss the most recent innovations, trends and concern as well as practical challenges encountered and solutions adopted in the field of mathematical modeling and High Performance Computing.

We are grateful to all the delegates participating around the globe, the sponsors of this conference to help us in making this Endeavour a great success. On behalf of LNCT family, I wish all of you pleasant stay and fruitful participation in the conference.

(Dr. Ashok Kumar Rai)
Conference Convener
(ICMMHPCST-2020)



Dr. Anug Garg
Director, Training & Placement
LNCT Group of Colleges, Bhopal

MESSAGE

Its delightful to learn that the Department of Engineering Mathematics, Lakshmi Narain College of Technology & Science, Bhopal, is Organizing **“International Conference on Mathematical Modeling and High Performance Computing in Science and Technology (ICMMHPCST-2020)”** sponsored by TEQIP-III, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal (Madhya Pradesh) in association with Jawaharlal Nehru Technological University, Hyderabad (Telangana) on **February 12-13, 2020**.

ICMMHPCST-2020 is going to be a premier forum for presentation of new research and advances in this field and attract the industry people to get associated with the Lakshmi Narain College of Technology & Science, Bhopal.

I would like to encourage the academics fraternity to make use of this opportunity for themselves and thus contribute for the benefits of students and society

I whole heartily wish for the mega success of conference

A handwritten signature in black ink, appearing to read 'Dr. Anug Garg', written on a light-colored background.

(Dr. Anug Garg)



Dr. Amit Bodh Upadhyay
OSD, LNCT&S, Bhopal

MESSAGE

It is the matter of great pleasure and pride that the Department of Engineering Mathematics, Lakshmi Narain College of Technology & Science, Bhopal, is Organizing **“International Conference on Mathematical Modeling and High Performance Computing in Science and Technology (ICMMHPCST-2020)”** sponsored by TEQIP-III, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal (Madhya Pradesh) in association with Jawaharlal Nehru Technological University, Hyderabad (Telangana) on **February 12-13, 2020.**

This conference brings together leading academicians, scientists & researchers to exchange and share their experiences and research results in all aspects of Mathematical Modeling and High Performance Computing. It also provides a premier interdisciplinary platform for researchers, practitioners and educators to present and discuss the most recent innovations, trends and concern as well as practical challenges encountered and solutions adopted in the field of mathematical modeling and High Performance Computing.

We are grateful to all the delegates participating around the globe, the sponsors of this conference to help us in making this Endeavour a great success. On behalf of LNCT family, I wish all of you pleasant stay and fruitful participation in the conference.

A handwritten signature in black ink that reads 'Amit'.

(Dr. Amit Bodh Upadhyay)



Dr. Sunil Singh
OSD, LNCTE, Bhopal

MESSAGE

I am happy to know that the Department of Engineering Mathematics, Lakshmi Narain College of Technology & Science, Bhopal, is Organizing “**International Conference on Mathematical Modeling and High Performance Computing in Science and Technology (ICMMHPCST-2020)**” sponsored by TEQIP-III, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal (Madhya Pradesh) in association with Jawaharlal Nehru Technological University, Hyderabad (Telangana) on **February 12-13, 2020**.

The conference assumes significance in the context of increasing use of mathematical modeling and high performance computing.

The technological institutes need to take academics leadership in this sphere. I hope the expert would focus attention on this aspect.

I wish the conference a grand success in its objectives.

A handwritten signature in black ink, appearing to be 'Sunil Singh', written on a light-colored background.

(Dr. Sunil Singh)



Dr. Sanjeet Kumar

Professor & Head

Department of Mathematics, LNCT&S, Bhopal
Conference Coordinator (ICMMHPCST-2020)

MESSAGE

I feel so enthusiastic to share that the Department of Engineering Mathematics, Lakshmi Narain College of Technology & Science, Bhopal, is Organizing “**International Conference on Mathematical Modeling and High Performance Computing in Science and Technology (ICMMHPCST-2020)**” sponsored by TEQIP-III, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal (Madhya Pradesh) in association with Jawaharlal Nehru Technological University, Hyderabad (Telangana) on **February 12-13, 2020**.

The combination of mathematical modeling and high performance computing is very often ignored in the scientific community although only the combination of these two technologies allows us to get better simulation results for many pressing problems in science and engineering.

The presence of large number of professionals, academicians and researchers would be able to generate high level of intellectual deliberations and would inspire younger scientists and faculty to go to greater heights.

I am sure the delegates and speakers will enjoy the Sessions and will carry with them pleasant memories of the Conference and the College Campus. I hope the Conference will create a strong group of specialists in the area of High Performance Computing and its Applications.

A handwritten signature in black ink, appearing to read "Sanjeet Kumar", with a long horizontal stroke extending to the right.

Dr. Sanjeet Kumar

INDEX

1. Mathematical Modeling: An application to Corrosion in a Petroleum Industry	01
<i>Arihant Jain</i>	
2. Evaluation of some parameters of Gd^{3+} activated $Sr_2ZnSi_2O_7$ host lattices synthesized by sol-gel procedure	01
<i>Vijay Singh, S.Kokate, Manoj K. Tiwari, N. Singh and R. Kokate</i>	
3. Face Recognition from Surveillance using Sequential CNN-Model	02
<i>Ashwin Perti, Mukul Pratap Singh, Harsh Panwar and Harsh Tyagi</i>	
4. Some Elliptic-Type Integrals and Their Hypergeometric Forms	02
<i>Sanjay Sharma, Richa Gupta, Bhupendra Tripathi, Roshni Sharma</i>	
5. Mathematical Modeling of Man- Made Natural Disasters: Forest Fire & Environmental Pollution	03
<i>Kirti Verma</i>	
6. An analysis of Operational Efficiency of Major Airports in India	03
<i>Sapna and Ruchi Gupta</i>	
7. Common Fixed Point Theorem for Weekly Compatible Self Mapping in Menger Space	04
<i>Geetanjali Sharma, Richa Gupta, Pankaj Tiwari and Rajesh Shrivastava</i>	
8. Common Fixed Points for a Pair of Self Mapping in Generalized Menger Spaces with a Graph	04
<i>N. S. Rajpoot, Brajendra Tiwari, Pankaj Tiwari and Bhupendra Tripathi</i>	
9. Some Fixed Point Theorem Satisfying General Contractive Condition of Integral Type	04
<i>Himanshu Tiwari and Subhashish Biswas</i>	
10. Integral Relation of I-Function	05
<i>Aradhna Mishra, Neelam Pandey and Jyoti Mishra</i>	
11. Analytic Study of Fixed Point Theorems in a Soft Metric Space with Integral Type Mapping	05
<i>Abid Khan, Ramakant Bhardwaj and Deepti Shakti</i>	
12. Bianchi Type-I Bulk Viscous Cosmological Models with Decaying Cosmological Term	05
<i>Abhay Singh, Bhupendra Tripathi and Roshni Sharma</i>	
13. Fixed Point Theorem for $(\beta)\alpha$, Admissible Mappings in Metric-like space with respect to Simulation Function	06
<i>Shiv Kant Tiwari and Lakshmi Narayan Mishra</i>	
14. A Formal Solution of Certain Simultaneous Quadruple Integral Equations Involving I-Functions	06
<i>R. K. Sakale</i>	
15. Dynamics and stability analysis in the population dynamics by introducing a vaccination strategy and computational simulation	06
<i>Rachna Soni</i>	
16. On Vehicle routing Problem using Mixed Integer Non-Linear Programming	07
<i>Mamta Raipuriya, Richa Gupta, Vivek Prasad Patel and Sushma Jat</i>	
17. The Two Contiguous Hypergeometric Function of the Some Linear Combination	07
<i>Aradhana Mishra & Poonam Mishra</i>	
18. Variational Inclusion Governed By $H(.,.)-\mu-\eta$ Mixed Accretive Mapping	08
<i>Sanjeev Gupta</i>	
19. Solution for Congestion Control and Challenges of Mobile Ad Hoc Network	08
<i>Harsh Pratap Singh, Divakar Singh, Rashmi Singh and Narendra Sharma</i>	
20. The Direct Method for the Optimal Solution of a Transportation Problem	09
<i>Priyanka Malviya, Sushma Jain and Rina Agrawal</i>	
21. Coincidence Points & Common Fixed Points of Expansive Mappings in \mathbb{R}^2-Metric Space	09
<i>Anil Bakhru, Richa Gupta and Manoj Ughade</i>	
22. Some Common Fixed Point Theorems in complete Fuzzy Metric Spaces	09
<i>Ajay Soni and Pooja Jain</i>	
23. Projective Semi-Symmetric Connections on Almost Para-Contact Manifolds	10
<i>S. K. Pal, M. K. Pandey and R. N. Singh</i>	
24. The Cosmic-ray Spectra at Spherical Termination Shocks	10
<i>Brijesh Singh Chauhan</i>	
25. Computational Numerical Methods for Solving Nonlinear Problems	11
<i>Gurusharan Kaur & Jyoti Gupta</i>	

26. <i>k</i>- Lipschitzian Mappings On Hyperconvex Metric Space <i>Qazi Aftab Kabir, Rupali Verma, Rizwana Jamal</i>	11
27. Fixed point results for F-contractive type mappings in Cone b-metric spaces <i>M.S. Chauhan, Rajesh Shrivastava, Rupali Verma and Qazi Aftab Kabir</i>	12
28. Review on Performance Analysis and Flow Features of Swirl Diffuser in a Floor Based Air Conditioning System <i>Deenoo Pawar, Anil Chourasia, Sandeep Mahore and Sachin Kumar Nikam</i>	12
29. Mathematical Modeling of Dilute Biphase Fluid Flow in Industrial Aero-cyclone Dust Separators <i>A N Sinha, V N Bartaria and Rakesh Dwiwedi</i>	13
30. Fuzzy EOQ Inventory Model Using Trapezoidal Fuzzy Number with Shortages <i>Sumit Pratap Singh</i>	14
31. Bayesian Approach for a Periodic Review Inventory Model with Emergency orders using Weibull Distribution for Demand Function <i>Sumit Pratap Singh</i>	14
32. Fractional Integral Operators Associated with certain Generalized Hypergeometric Function for Real Positive Definite Symmetric <i>Anamika Dubey</i>	14
33. HR Management and Employee Performance Using Ethics: A Critical Analysis <i>Hema Rathore</i>	15
34. Application of Graph Theory in Airline Transportation Control <i>Sanjay Kumar Bisen and Brajendra Tiwari</i>	15
35. A Mathematical Model for Study Breast Cancer Development and Analyze their Prevention and Treatment <i>Deepika Basedia, Rajesh Shrivastava, Keerty Shrivastava and Ramakant Bhardwaj</i>	16
36. A Mathematical Model for the Slip Condition of the Blood flow through a Stenosed artery using Casson-fluid flow <i>Ajay Kumar, R.S. Chandel, Rajesh Shrivastava, Keerty Shrivastava & Sanjeet Kumar</i>	16
37. Some Important Results on Fixed Point Theorem using Generalized Metric Spaces <i>Rakesh Kumar Verma</i>	17
38. The Involving in I-Function of Two Variables and General Class of Polynomials <i>Aradhana Mishra, Neelam Pandey and Poonam Mishra</i>	17
39. Classification of Large Data Set for Social Websites using Hadoop <i>Rajendra Gupta and Meenakshi Dayal</i>	18
40. Incomplete Mittag-Leffler Function <i>Dharmendra Kumar Singh and Saurabh Porwal</i>	18
41. Extreme Values Analysis for Finding Outliers Detection Using Machine Learning to Detect Predicted Data Points <i>Ashish Jain</i>	19
42. Fuzzy EOQ Model for Deteriorating Items with Stock-Dependent Demand and Partial Backlogging <i>Yogendra Kumar Rajoria, Anand Chauhan and Preeti Poswal</i>	19
43. Comparison of Wavelet and Fourier Transform-A Case Study <i>Amit Tanwar, Rahul Boadh, Yogendra Kumar Rajoria and Mina Yadav</i>	20
44. Customization of the WRF model over Gurgaon region by Sensitivity of PBL schemes for their application of Pollutant Dispersion <i>Neelam Sharma, Rahul Boadh and Ravendra Singh</i>	20
45. Analysis of Average Rainfall Phailin Cyclone by using Double Integration Technique <i>Agnivesh Tiwari, Yogendra Kumar Rajoria and Rahul Boadh</i>	21
46. Optimization of Some Transportation Problem by Proposed Method <i>Dipti Yadav, Yogendra Kumar Rajoria and Ravendra Singh</i>	21
47. A Mathematical Model to Solve the Huxley Equation by New Homotopy Perturbation Method <i>Ravendra Singh, Yogendra Kumar Rajoria and Dinesh Kumar Maurya</i>	21
48. Health Risk Assessment by using Fuzzy Logic Application <i>Gunjan Kalra, Rahul Boadh and Yogendra Kumar Rajoria</i>	22

49. Analysis of Aircraft activity by using method of Numerical Integration <i>Kabir Chaudhary, Yogendra Kumar Rajoria and Ravendra Singh</i>	22
50. Use of Fuzzy Expert System for Investigating the Child Anaemia-A Case Study <i>Rahul Boadh, Meena Rawat and Yogendra Kumar Rajoria</i>	22
51. Application of CFD Numerical Modeling in Air Quality Assessment and Executing Mitigation Measures <i>A N Sinha and V N Bartaria</i>	23
52. Increase network lifetime optimisation efficiency and increase the stability period using the Gravitational Energy Sensitive Energy Hierarchy Protocol <i>Mohit Singh Tomar, Deepak Jain and Ankur Pandey</i>	24
53. About Families of Pairwise Connected Sets <i>Anjali Srivastava and Rohit Gaur</i>	24
54. Dual Cryptography with Mobile GPS location Mechanism <i>Dinesh Kumar Moriya and Sharad Pathak</i>	25
55. Feeling Detection dependent on Images and Captions on Social Media <i>Aditya Patel</i>	25
56. Content Based Facial Emotion Recognition Model utilizing Machine Learning Algorithm <i>Aditya Patel</i>	26
57. Survey on Photoluminescence of Some Recent Work on Silicate Based Phosphors <i>Anjali Yadav, R.K. Kuraria and S.R. Kuraria</i>	26
58. Common Fixed Point Results in Menger Spaces <i>Prashant Namdeo and Subhashish Biswas</i>	26
59. Application of Graph theory in operations Research <i>Priyanka Swanker and Richa Gupta</i>	27
60. Emergence of Cloud Computing in Higher Education <i>AbhaTenguria, Vivek Bhardwaj and Dinesh Kumar Moriya</i>	27
61. A Bingham plastic and peripheral layer model of blood flow in the presence of stenosed artery <i>Ajay Kumar, R.S. Chandel, Rajesh Shrivastava, Keerty Shrivastava & Sanjeet Kumar</i>	28
62. A non-Newtonian fluid flow model for the slip condition on blood flow through a stenosed artery using power-law fluid <i>Ajay Kumar, R.S. Chandel, Rajesh Shrivastava, Keerty Shrivastava & Sanjeet Kumar</i>	28
63. Mathematical Modeling of Linear and Nonlinear Equations <i>Jyoti Gupta & Gurusharan Kaur</i>	29
64. Fixed point results for contractive type mappings in Cone b-metric spaces <i>M.S. Chauhan, Rajesh Shrivastava, Rupali Verma, Qazi Aftab Kabir</i>	29
65. IOT Based Smart Crop Monitoring in Farm Land <i>Shareya Naik, Rajeev Kumar, Vivek Kumar and Utkarsh Shrivastava</i>	30
66. Matlab A Fourth-Generation Programming Language of New Era: A Review <i>D. S. Saluja and Amarjeet Singh Saluja</i>	30
67. Some Fixed Point Results in a-Metric Space and Ab-Metric Space <i>Suresh Nagle, Rajni Bhargav, Manoj Ughade</i>	31
68. Some Fixed Point Theorem Satisfying General Contractive Condition of Integral Type <i>Himanshu Tiwari and Subhashish Biswas</i>	31
69. CFD Modeling and Simulation in the Heat Transfer Studies in Solar Air heating <i>Dharam Singh and V. N. Bartaria</i>	31
70. Time Synchronization using Hierarchical Clustering for reliable data service in MANET <i>Nidhi, Kamlesh Chandravanshi, Sushil Kumar,</i>	32
71. A smart way of Compression <i>Sushil Kumar</i>	32
72. A Digitalized Development Competency in Industrial Internet of Things <i>Yedlapally Sreepada Surya, Ramesh Chandra Panda and Javalkar Dinesh Kumar</i>	33
73. A Review Paper on Electro Automotive Smart Systems Using Internet of Things <i>Yedlapally Sreepada Surya, Ramesh Chandra Panda Javalkar Dinesh Kumar and Itishree Mohanty</i>	33

74. Glaucoma diagnosis using discrete wavelet transforms and Histogram features from fundus images	34
<i>Nandini Kokate, K.G. Kirar and M.L. Jatav</i>	34
75. Results on Multivalued Mappings in Intuitionistic Fuzzy Metric Spaces	
<i>Reema Tuteja, Mayank Sharma and Rituja Nighojkar</i>	
76. An Application of Compatibility and Weak Compatibility in Intuitionisticfuzzy Metric Spaces	34
<i>Mayank Sharma , Ramakant Sharma and Megha Kamble</i>	
77. Neural Network Approach to Predict Soaked CBR of Routine Subgrade soil	35
<i>Anil Kumar Saxena</i>	
78. A Unique VLSI Primarily Based Structure for Computation of 2D-DCT Image Compression	35
<i>Prashant Chaturvedi and Soni Changlani</i>	
79. Human Area Networking using Red Tacton Technology	36
<i>Ria Sharma, Pratishtha Singh and Prashant Chaturvedi</i>	
80. Indoor Positioning System using Ultra Wide-band Technology	36
<i>Pratishtha Singh, Ria Sharma and Prashant Chaturvedi</i>	
81. Common Fixed Point Theorems in Partially Ordered Metric Spaces with Altering Distance Function	37
<i>Rajesh Shrivastava, R.K. Dubey, Pankaj Tiwari</i>	
82. Numerical solutions of Schrödinger equations with Harmonic Oscillator describing motion of Quantum Oscillator	37
<i>Amit Goswami and Preetam Singh Gour</i>	
83. Binary Topological Space	38
<i>Nazir Ahmad Ahengar, Roshani Sharma, J.K. Maitra and Sujeet Chaturvedi</i>	
84. Mathematical Concept of Compound Redundant system with availability and reliability parameter under supplementary variable method	38
<i>Sonendra Kumar Gupta</i>	
85. A Basic generalized properties of Transprocal Matrix and Transprocose Matrix.	38
<i>Ram Milan Singh and Manoj Ughade</i>	
86. Machine Learning Algorithms in WSNs: A Review Article	39
<i>Pooja Lalwani and Vasima Khan</i>	
87. iwalk- A Smart Blind Stick	39
<i>Shiva Kuchya, Sneha Wadhvani and Vishal Patel</i>	
88. Analysis of Triaxility Stress and Damage in Hot Extusion Process of AL2024 using Finite Element Method	39
<i>Shailendra Dwivedi and Neeraj Dubey</i>	
89. Finite Element Analysis of Hot Rolling for an Aluminium 2024 Plate	40
<i>Shailendra Dwivedi and Neeraj Dubey</i>	
90. Class(es) of Estimators under Non-Response and Measurement Error in Surveys	40
<i>Diwakar Shukla, Abha Tenguria, Sharad Pathak and Dinesh Kumar Moriya</i>	
91. Lie Algebra and q Special Functions of Mathematical Physics	40
<i>Ritu Sharma and Abha Tenguria</i>	
92. Banach (E,1) Summability of the Derived Fourier Series	41
<i>Kalpana Saxena and Manju Prabhakar</i>	
93. Common Fixed Point Results for F-contraction in Complete b - Metric Spaces	41
<i>Abha Tenguria and Sarika Saxena</i>	
94. Some Fixed Point Theorems for Expansive Type Mappings in Dislocated Metric Space	41
<i>Sarla Chouhan, Prabha Chouhan and Neeraj Malviya</i>	
95. On Ricci Quarter Symmetric Metric Connection	42
<i>Teerathram Raghuwanshi, Swati Jain, Anil Goyal and Manoj Pandey</i>	
96. A Taylor Series Method for the Solution of the Newman Boundary Value Problems for Partial Differential Equations	42
<i>Chitra Singh</i>	
97. DSSSWMS:An Improved Approach For The Decision Support System In Solid Waste Management System	42
<i>Narendra Sharma, Ratnesh Litoriya, Harsh Pratap Singh and Deepika Sharma</i>	
98. Mathematical Modeling of Indoor Air Pollutants: A Review	43
<i>Sachin Kumar Khare, Ravindra Randa and V N Bartaria</i>	

99.	Generalized Fractional Kinetic Equations involving Generalized Extended--τ Hypergeometric Function	43
	<i>Jai Prakash Pate</i>	
100.	Global Stability Analysis of SITRS Model of Influenza	43
	<i>Trupti Barve, Sandeep Kumar Tiwari and Pradeep Porwal</i>	
101.	Coupled fixed-point theorem using E.A property in complex valued rectangular (generalized) metric space.	44
	<i>Mona Verma</i>	
102.	Parametric excitation of high-frequency surface Plasma waves in Bismuth- Metal Interface.	44
	<i>Ashim Prakash Jain and Sangeeta Kapoor.</i>	
103.	Artificial Neural Network Modeling for Estimation of Carbon Monoxide Concentration	44
	<i>Sangeeta Kapoor, Sudhir Nigam, Rashmi Nigam</i>	
104.	Intelligent Phishing Detection Classification Using Hybrid Approach	45
	<i>Shivani Goutam, Rajeev Kumar and Vivek Kumar</i>	
105.	Review on mathematical modelling of an Internal Combustion Engine	45
	<i>Rajeev Singh Chauhan, Nitin Shrivastava and Arun Kumar Wamankar</i>	
106.	Kinetic Model for Performance Prediction of Anaerobic Digester	46
	<i>Arvind Kumar Mishra, Prashant Baredar, Anjaney Pandey, Deepak Kumar Rathaur, and Prashant pandey</i>	
107.	Emotion Detection based on Images and Captions on Social Media	46
	<i>Aditya Patel, Hitesh Gupta and Utkarsh Dwivedi</i>	
108.	Content Based Facial Emotion Recognition Model using Machine Learning Algorithm	47
	<i>Aditya Patel, Vijay Kumar Trivedi and Utkarsh Dwivedi</i>	
109.	Role of SODAR in the Climate Observing and Predicting System	47
	<i>Anjali S. Nair, Priyanka Singh, Mamta Devi, Kirti Soni, Mahavir Singh and Sangeet Kapoor</i>	
110.	Security Concerns, Matters and Methods for Wireless Sensor Network	48
	<i>Leena Jadhav and Jitendra Sheetlani</i>	
111.	Mathematical Modeling of Heat Exchange in the Under Ground Pipe of an Earth Air Heat Exchanger System	48
	<i>K. V. Rao, V. N. Bartaria and Prashant Bhave</i>	
112.	Extreme Values Analysis for Finding Outliers Detection Using Machine Learning to Detect Predicted Data Points	49
	<i>Atul Kumar Gupta, Ashish Jain, Nikesh Tiwari</i>	
113.	Review of Artificial Neural Network and Its Applications	49
	<i>Nikita Naik and Jagruti Sohale</i>	
114.	Role of AI in Designing Smart Homes	50
	<i>Ashi Jain and Bhumika Lalchandani</i>	
115.	Application of Intuitionistic Fuzzy Soft Matrix Theory in Decision Making in Real Life Problem	50
	<i>Manoj Sharma, and Dharendra Kumar Shukla</i>	
116.	Generalized the Result on Common Fixed Point Theorem in Complex Valued b- Metric Space	50
	<i>Pradeep Kumar Dwivedi</i>	
117.	Big Data Analytics and High Performance Computing: Issues, Challenges and Paradigms	51
	<i>Swati Namdev and Sunil Phulre</i>	
118.	Assortment of Data on Life table with Role of control of Internal Parasite in calf	51
	<i>Shoyeb Ali Sayyed</i>	
119.	Review Analysis of IOT based Solar Energy System	51
	<i>Anand Singh and Manish Khemariya</i>	
120.	Glaucoma diagnosis using discrete wavelet transforms and Histogram features from fundus images	52
	<i>Nandini Kokate, K.G Kirar and M.L. Jatav</i>	
121.	Some fixed point theorems for generalized Kannan type mappings in b-metric spaces	52
	<i>Motiram Likhitkar, R. D. Daheriya, and Manoj Ughade</i>	
122.	Strong convergence of a general algorithm for nonexpansive mappings in Banach spaces	52
	<i>R. D. Daheriya, Umesh Dongre and Manoj Ughade</i>	

122.	Strong convergence of a general algorithm for nonexpansive mappings in Banach spaces <i>R. D. Daheriya, Umesh Dongre and Manoj Ughade</i>	52
123.	Speech Recognition Application without Internet Connection <i>Aakarsh Singh Bais, Meetoo Singh Shreya Singh</i>	53
124.	AI based chatbot with the help of Image processing for Medical Assistance <i>Anmol Saxena, Ajeyata Verma and Anukul Kumar</i>	53
125.	A.I based Chat Bots for Providing Health Related Information <i>Deepanshu Singh, Aashutosh Gujrati and Arundhati Dube</i>	53
126.	A Novel Technique to Early Detection and Avoidance of Congestion in MANET <i>Bhawana Pillai, Deepak Singh Tomar and Ashish Khare</i>	54
127.	A Security Issues and Approaches in Cloud Computing <i>Virendra Kumar Tiwari, Vishwa Gupta and Pankaj Deoskar</i>	54
128.	Common Fixed Point Theorem for Multivalued Gneralized Fuzzy Mapping in b-metric space <i>Umashankar singh and Naval Singh</i>	54
129.	Optimal solution method for Transportation problems of multiple variables <i>Aarti Borasi and Brajendra Tiwari</i>	55
130.	Reliability of System with Two Repair Facilities <i>Anil Singh and Sanjay Chaudhary</i>	55
131.	Modelling of the Risk of Cancellation of Policies using Fuzzy Logic Approach <i>Gaurav Sharma and Sanjeev Kumar</i>	55
132.	Availability Evaluation of 1-Unit System with 2-Warm Standbys <i>Kanta and Sanjay Chaudhary</i>	56
133.	Investigation about Stock Market Timing using Fuzzy Inference System <i>Manisha Dubey and SanjeevKumar</i>	56
134.	Fuzzy Logic Concatenation in Biometric Identification Systems <i>Monika Rathore and Sanjeev Kumar</i>	56
135.	Reliability of Three Unit System with Two Type of Repair <i>Shiva and Sanjay Chaudhary</i>	57
136.	A New Common Fixed Point Theorem for Two Pairs of Mappings Satisfying Implicit Contraction Condition in Triangular Intuitionistic Fuzzy Metric Spaces <i>Manoj Ughade</i>	57
137.	A Survey on Development of Association Rule Mining Model for Gender Classification Over Fingerprint Database <i>Meena Tiwari and Ashish Mishra</i>	58
138.	Different explicit rules of Combinatorics in ancient India <i>Nazida Shaikh and V. K. Gupta</i>	58
139.	Common Fixed Point Theorems in Ab-Metric Space <i>Neetu Sharma</i>	59
140.	Influence of Wind on Urban Atmospheric Boundary Layer characteristics at the Capital Region Delhi <i>Mamta Devi , Anjali S. Nair, Priyanka Singh, Narender Lamba, Kirti Soni, Mahavir Singh and Sangeeta Kapoor</i>	59
141.	Characteristics Ventilation Coefficient over Delhi during Summer <i>Priyanka Singh, Mamta Devi, Anjali S. Nair, Narender Lamba, Kirti Soni, Mahavir Singh and Sangeeta Kapoor</i>	60
142.	A study of queuing model with the analysis of payment mode and waiting time in supermarket <i>Sadhna Singh, R . K. Srivastava and Amendra Singh</i>	60
143.	Diagnosis of ocular diseases by processing OCT images <i>Shweta Chouksey and Sunil Phulre</i>	61

Mathematical Modeling: An application to Corrosion in a Petroleum Industry

Arihant Jain

School of Studies in Mathematics, Vikram University, Ujjain (M.P.)-India

Email: arihant2412@gmail.com

Abstract: Mathematical modeling is richly endowed with many analytic computational techniques for analyzing real life situations. Recent reports have confirmed that several billion dollars were lost to corrosion, in addition to environmental pollution and economic wastage in cleaning up the environmental mess caused by corrosion. This paper considers application of mathematical modeling to corrosion problems. It uses the mathematical modeling techniques to forecast the life expectancy of industrial equipment in the refinery, petroleum reservoirs and gas pipelines' distribution. The models considered in this direction are the heat-mass transfer equation, Zhim-Hoffman's equation, equations arising from electrolysis and finally gas pipeline distribution.

Keywords and Phrases: Mathematical models, corrosion, phase transition, heat equation, galvanic corrosion.

AMS Subject Classification : 73V and 80A.

Evaluation of some parameters of Gd³⁺ activated Sr₂ZnSi₂O₇ host lattices synthesized by sol-gel procedure

Vijay Singh¹, S.Kokate², Manoj K. Tiwari³, N. Singh⁴ and R. Kokate⁵

^aDepartment of Chemical Engineering, Konkuk University, Seoul, 05029, Korea

Lakshmi Narain College of Technology, Bhopal (M.P.)-India

MIET, Shahapur, Bhandara, 441906, India

Email: vijayjiin2006@yahoo.com, vijayjiin@gmail.com

Abstract: In this study, a series of Sr_{2-x}ZnSi₂O₇:xGd (where x = 0.01 to 0.11) samples were synthesized using the sol-gel procedure. X-Ray powder diffraction (XRD), scanning electron microscope (SEM), and photoluminescence (PL) spectroscopy were employed to analyze the crystal characteristics, surface morphologies, and spectral characteristics of these samples. The dominant emission peak due to ⁶P_{7/2} → ⁸S_{7/2} transition of Gd³⁺ was obtained for the prepared samples. The electron spin resonance (ESR) and PL analyses of the samples confirmed the presence of the Gd³⁺ in the Sr₂ZnSi₂O₇ lattice. ESR studies suggested that Gd³⁺ ions occupy distorted Sr²⁺ sites in the host lattice. Photon interaction parameters in the photon energy range 1 keV–100 GeV for mixture of Sr₂ZnSi₂O₇ and gadolinium (mass attenuation coefficients and effective atomic numbers) for have been calculated. These photon interaction parameters are varying largely for the energy range 1 keV–100 MeV with the compositions with a maximum for the highest gadolinium.

Keywords: Ultraviolet radiation; Sol-gel; ESR; Gd³⁺; Sr₂ZnSi₂O₇; Gamma-ray

Face Recognition from Surveillance using Sequential CNN-Model

Ashwin Perti¹, Mukul Pratap Singh², Harsh Panwar³ and Harsh Tyagi⁴

ABES Engineering College, Ghaziabad (U.P)-India

Email: ashwinperti@abes.ac.in, mukul.16bit1033@abes.ac.in, harsh.16bit1096@abes.ac.in,
harsh.16bit1062@abes.ac.in

Abstract: Now-a-days there is lot of research going on face recognition and identification, with the increase in computational power working on images became easy and many complex and deep neural networks are implemented on images. There are many applications which updates automatic attendance and face recognition, we just wanted to extend to super market problem. This paper solves the problem of identification of customer and employees in super market. We have used deep convolution network and Siamese network to train images to classify in to customers, important customers and employees from cameras. This also compares the results from different models.

Index Terms: Neural network, Siamese network

Some Elliptic-Type Integrals and Their Hypergeometric Forms

Sanjay Sharma¹, Richa Gupta², Bhupendra Tripathi³, Roshni Sharma⁴

¹Department of School Education, Bhopal (M.P)-India

²SRK University Bhopal(M.P)-India

³Lakshmi Narain College of Technology, & Science, Bhopal (M.P)-India.

⁴Lakshmi Narain College of Technology, Bhopal (M.P)-India.

Email: sanjaysharma3240@gmail.com, richasharad.gupta@gmail.com, bhupendrat@lnct.ac.in,
roshnis@lnct.ac.in

Abstract: In the paper, we established Hyper geometric forms of different elliptic – type integrals have been studied due to their importance and applications in certain problems involving computations of the radiation field off axis from a uniform circular disc radiating according to an arbitrary angular distribution law.

Mathematical Modeling of Man- Made Natural Disasters: Forest Fire & Environmental Pollution

Kirti Verma

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: kirtiv@lnct.ac.in

Abstract: Mathematics is an extraordinary exercise of the human mind in abstracting the results of observation to find similarities and differences between phenomena. These relations between phenomena make it possible to organize the natural world into discrete sets of objects that can be studied using similar mathematical objects and methods. Natural disasters cannot be prevented; scientists can use Mathematical Modeling to help limit the damage. Mathematical models are used to summarize relationships between the characteristics of natural disasters. They are ultimately used to answer questions that humans have about natural disasters, and predict the results of events that have not occurred, but may be possible or even likely. In this paper, Mathematical models of some problems related to Natural disaster are discussed.

An analysis of Operational Efficiency of Major Airports in India

Sapna¹ and Ruchi Gupta²

Manav Rachna University, Faridabad (U.P)- India.

Email : chauhansap11@gmail.com, ruchigupta@mru.edu.in

Abstract: This paper deals with major airport's data of India for the year 2017-2018 and analysis for their respective efficiencies. This empirical study evaluates the operational efficiencies of 30 major India airports using data envelopment analysis and some of its recent developments. Various airport characteristics are evaluated to determine their relationship to an airport's efficiency. In this model, we have taken number of runways, number of passenger terminals and total expenditure as input variables and ASQ rating, aircraft movements, number of passengers, freight and logistics and revenue generated, as output variables.

The model focused in this paper is DEA model (Data Envelopment Analysis) and calculation is done using MS Excel.

Index Terms: Airport Efficiency, ASQ, ATQ, DEA Model.

Common Fixed Point Theorem for Weekly Compatible Self Mapping in Menger Space

Geetanjali Sharma¹, Richa Gupta², Pankaj Tiwari³ and Rajesh Shrivastava⁴

^{1,2}Sarvepalli Radhakrishnan University, Bhopal (M.P)-India

³Govt. Naveen College, Lidhoura, Tikamgarh (M.P)-India

⁴Govt. Dr. Shyama Prasad Mukharji Science & Comm. College, Bhopal (M.P)-India

E-Mail: ajaygeet@gmail.com, richasharad.gupta@gmail.com, pankajvist@gmail.com

Abstract: In this paper, we prove the nation of Menger space and prove a common fixed point theorem for pairs of weakly compatible self mapping. Which generalize the well known results.

Keywords: Common fixed points, Metric space, Menger space, t-norm and Weakly Compatible mappings.

AMS Subject Classification (2000) – 45H10, 54H25.

Common Fixed Points for a Pair of Self Mapping in Generalized Menger Spaces with a Graph

N. S. Rajpoot¹, Brajendra Tiwari², Pankaj Tiwari³ and Bhupendra Tripathi⁴

^(1,2)RKDF University, Bhopal (M.P)-India

³(G.F.) Govt. Naveen College, Lidhoura Tikamgarh (M.P)-India

⁴Lakshmi Narain College of Technology & Science, Bhopal (M.P)-India

E-Mail: narendrarajput912@gmail.com, brajendra16.tiwari@gmail.com,

bttripathirewa@yahoo.co.in

Abstract: In this paper, we prove the existence and uniqueness of points of coincidence and common fixed points for a pair of self-mappings defined on generalized metric spaces with a graph. Our results improve and extend several recent results of metric fixed point theory.

Keywords: Coincidence and common fixed points, Metric space, Menger space, self-mappings.

Some Fixed Point Theorem Satisfying General Contractive Condition of Integral Type

Himanshu Tiwari¹ and Subhashish Biswas²

Kalinga University, Raipur (C.G.)-India.

E-mail: himanshu.tiwari.ht@gmail.com deb12rishika@gmail.com shubhb@yahoo.co.in

Abstract: In this paper, we establish a fixed point theorem for a pair of self maps satisfying a general contractive condition of integral type. This theorem extends and generalizes some early results of Boikanyo [4] and Jaggi and Dass [12].

Keywords: Lebesgue-integrable map, Complete metric space, Common fixed point

AMS Subject Classification (2000): 54H25, 47H10.

Integral Relation of I-Function

Aradhna Mishra¹, Neelam Pandey² and Jyoti Mishra³

^{1,2}APS University, Model Science college , Rewa (M.P)-India

³Gyan Ganga Institute of Technology and Sciences, Jabalpur (M.P)-India

Email: jyoti.mishra198109@gmail.com

Abstract: I- Function formulae play an important role in special function. In this paper we aim to establish some new integral relation of I- function of one variable. Some special cases also presented in this paper.

Keywords: I- Function, Multivariable polynomial.

Analytic Study of Fixed Point Theorems in a Soft Metric Space with Integral Type Mapping

Abid Khan¹, Ramakant Bhardwaj² and Deepti Shakti³

^{1,3}Amity University, Madhya Pradesh, Gwalior (M.P)-India

²Amity University, Kolkata (WB) -India

Email: abid69304@gmail.com

Abstract: In the present paper we established fixed point and common fixed point theorems in soft metric space with integral type mappings. Analytic results of fixed points will be established.

Key-words - common fixed point; rational conditions; compact metric spaces;

AMS Classification: 47H10, 54H25, 55M20.

Bianchi Type-I Bulk Viscous Cosmological Models with Decaying Cosmological Term

Abhay Singh¹, Bhupendra Tripathi² and Roshni Sharma³

Technocrats Institute of Technology and Science, Bhopal (M.P)-India

Lakshmi Narain College of Technology, & Science, Bhopal (M.P)-India.

Email: abhaysingh5784@gmail.com, bhupendrat@lnct.ac.in, roshnis@lnct.ac.in

Abstract: Bianchi type I cosmological models with varying cosmological term Λ and bulk viscous fluid are investigated. Exact solutions of Einstein's field equations have been studied by assuming the law for variation of Hubble's parameter that yields a constant value of deceleration parameter. Physical and kinematical properties of the models are also discussed.

Keywords: Cosmological term Λ , Deceleration parameter q , Hubble parameter H , Scale factor S .

Fixed Point Theorem for $(\beta\alpha)$ -Admissible Mappings in Metric-like space with respect to Simulation Function

Shiv Kant Tiwari¹ and Lakshmi Narayan Mishra²

Jai Prakash Mahila College Chapra (Bihar) 804103 India

Email: shivkantmath@gmail.com

Abstract: In this paper, we have introduced some new type simulation function of (a,b) -admissible mappings with respect to Z -contraction in the complete metric-like space and our results improved several recent results in the metric-like space. Also, we supported example for justification of theorem.

Keywords: Simulation function, Admissible mapping, Fixed point, Contraction mapping

A Formal Solution of Certain Simultaneous Quadruple Integral Equations Involving I-Functions

R. K. Sakale

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: rajeshs@lnct.ac.in

Abstract: The problem discussed is to obtain the solution of simultaneous quadruple integral equations involving I-functions. The method followed is that of fractional integration. The given simultaneous quadruple integral equations have been transformed by the application of fractional Erdelyi-Kober operators to four others simultaneous integral equations with a common Kernel. Here for the sake of generality the I-function is assumed as unsymmetrical Fourier kernel. Here with the help of theorems of Mellin transform, the solution of simultaneous Quadruple Integral equations is obtained. Some interesting particular cases have been derived.

Dynamics and stability analysis in the population dynamics by introducing a vaccination strategy and computational simulation

Rachna Soni

Millennium Institute of Technology, Bhopal (M.P)-India

Email: rachnasoni2005@gmail.com

Abstract: In this paper, we have studied the dynamical behavior of the population due to the presence of demographic changes such as; fertility changes, population growth rate, mortality rate, mortality etc. This complication arises due to the environmental changes which are affected by pollution and the unavailability of the healthy food resources. To overcome from these difficulties, we can introduce the vaccination strategy to increase the immunity system of the body. The main aim of this study deals with the changes arise in the Malthusian growth model by including the vaccination rate in the equation of this model and obtained the stability conditions of all the existing equilibrium state of the proposed model. Some computational simulations are also performed to justify the results obtained.

Keywords: Equilibrium state, Malthusian growth model, stability analysis, vaccination

On Vehicle routing Problem using Mixed Integer Non-Linear Programming

Mamta Raipuriya¹, Richa Gupta², Vivek Prasad Patel³ and Sushma Jat

^(1,2) Sarvepalli Radhakrishnan University, Bhopal (M.P)-India

³ Oriental Institute of Science & Technology, Bhopal (M.P)-India

⁴ Lakshmi Narain College

of Technology & Science, Bhopal (M.P)-India

Email: mamtaraipuriya@gmail.com, sushmaj@lnct.ac.in

Abstract: The family of (VRPs) has received remarkable attention in the field of combinatorial optimization after its introduction in the paper of Dantzig and Ramser. VRPs determine a set of vehicle routes in order to accomplish transportation requests at minimum cost. In this paper we develop a mixed-integer non-linear programming model for vrp and apply it in electric vehicle charging.

Keywords: Vehicle Routing Problems, mixed-integer non-linear programming, electric vehicle charging.

The Two Contiguous Hypergeometric Function of the Some Linear Combination

Aradhana Mishra & Poonam Mishra

APS University Rewa (M.P)-India

Email: aradhanamishra04@gmil.com

Abstract: The aims of this paper are to give using some contiguous relations. The asymptotic behaviour of some linear combination of two symmetric contiguous hypergeometric functions under some conditions of their parameters. The hypergeometric function belongs to an important class of special function they are very useful in many fields of physical and astronomical researches in mathematical analysis and its application they have significant properties identities of special values. And transformation formula. These properties have many interesting application in combinational analysis and arithmetic geometric. The first systematic and thorough study of hypergeometric series was carried out. An hypergeometric function is called contiguous to the other function if one. Two. Or three of the parameter are increased or diminished by an integer;

Variational Inclusion Governed By $H(\cdot, \cdot) - \varphi - \eta$ -Mixed Accretive Mapping

Sanjeev Gupta

GLA University, Mathura, (U.P) 281406-India

Email: gupta.sanjeev@gla.ac.in

Abstract: In this paper, we look into a concept of accretive mappings called $H(\cdot, \cdot)$ - φ - η -mixed accretive mappings in Banach spaces. We extend the concept of proximal-point mappings connected with generalized m -accretive mappings to the $H(\cdot, \cdot)$ - φ - η -mixed accretive mappings and study its characteristics like single-valued property as well as Lipschitz continuity. Since proximal point mapping play an important role to solve variational inclusion problem. Therefore, we frame an iterative algorithm to solve variational inclusion problem as an application of introduced proximal point mapping and show its convergence with considerable assumptions.

Keywords: $H(\cdot, \cdot)$ - φ - η -mixed accretive mapping, proximal point mapping, iterative algorithm, variational-like inclusion

Solution for Congestion Control and Challenges of Mobile Ad Hoc Network

Harsh Pratap Singh¹, Divakar Singh², Rashmi Singh³ and Narendra Sharma⁴

¹Sri Satya Sai University of Technology and Medical Sciences,
Sehore (M.P)-India

²Barkatullah University, Bhopal (M.P)-India

³Radharaman Institute of Technology and Science, Bhopal (M.P)-India

E-mail: singhharshpratap@gmail.com

Abstract: Congestion is a serious problem in mobile ad hoc network. In such network each and every node behaves as the router and has the capacity to convey the packet from correspondent to respondent. Because of the limited capacity of the bandwidth every node may transmit the packet at the same time due to this congestion arises which incur long delay and high packet loss which degrades the performance of the network. This network has dynamic topology and has shared behavior, it automatically forms the network temporarily which helps in transmission earl. To overcome these difficulties many approaches has been suggested earlier. This paper, presents the overview of the existing approaches and also discussing difference between these congestion control techniques.

Keywords: Congestion, Mobile ad hoc network, Bandwidth, Shared behavior, Dynamic topology

The Direct Method for the Optimal Solution of a Transportation Problem

Priyanka Malviya¹, Sushma Jain² and Rina agrawal³

Govt. M.V.M., Bhopal (M.P.), India

Email: deepriyanka_13@yahoo.com, sushmajain22@gmail.com, drrinaagrawal@gmail.com

Abstract: In this paper, we discuss a new approach for solving both balanced and unbalanced transportation problem. Here we present a paper entitled “The direct method for finding the optimal solution of a transportation problem”, which is proposed to find an optimum solution. The algorithm for proposed method discussed in this paper gives an initial as well as either optimal solution or near to optimal solution. Some numerical examples has been given to show the efficiency of the proposed methodology. Also the results of new approach are compared with the MODI's method and we can see that the proposed method gives either same or less optimal cost as compare to MODI's method within shorter time period and also it is easy to use.

Keywords: Balanced and unbalanced Transportation Problem, Basic Feasible Solution, Optimal Solution, MODI method, Proposed method.

Coincidence Points & Common Fixed Points of Expansive Mappings in *Ab*-Metric Space

Anil Bakhru¹, Richa Gupta² and Manoj Ughade³

¹S.V. Polytechnic College, Bhopal (M.P.), India

² Sarvepalli Radhakrishnan University, Bhopal (M.P.), India

³Government J.H. Post Graduate College, Betul (M.P) 460001 India

Email: anilbakhru@gmail.com

Abstract: In this paper, we prove some fixed point theorems for expansive mapping on *Ab*-metric spaces. Our results extend/generalize many pre-existing results in literature.

Keywords: *Ab*-metric space; expansive mapping; fixed point.

Some Common Fixed Point Theorems in complete Fuzzy Metric Spaces

Ajay Soni¹ and Pooja Jain²

Lakshmi Narain College of Technology, Bhopal, India

E-mail: ajay.mvm01@yahoo.com

Abstract: In this paper we introduce the concept of common fixed point in the framework of L-fuzzy metric space and establish a fixed point theorem for self mappings. This result generalizes and extends the existing result et al. [3] on common fixed point on fuzzy metric space to L-fuzzy metric space using weak compatible mapping. In the support of our result.

Projective Semi-Symmetric Connections on Almost Para-Contact Manifolds

S. K. Pal, M. K. Pandey and R. N. Singh

Govt., T.S.S. Naigarhi, Rewa (M.P.) India

Email: skpalmath85@gmail.com

Abstract: In this paper, we have extended the study of the projective semi-symmetric connections on almost Para-contact manifold. We have shown that the projective semi-symmetric connection on P-Sasakian manifold becomes a special projective semi-symmetric connection. We also prove that if curvature tensor of projective semi-symmetric connection vanishes, then SP-Sasakian manifold admits an η -parallel Ricci tensor.

Keywords and phrases: Projective semi-symmetric connection, curvature tensor, Para-cantact manifold.

AMS Mathematics Subject Classification (2010): 53C12.

The Cosmic-ray Spectra at Spherical Termination Shocks

Brijesh Singh Chauhan

Govt. Arts and Commerce College Majhauili Sidhi (M.P.)-India

Email: s.brijesh3@gmail.com

Abstract: We discuss the nature of the steady-state spectra of particles accelerated at stationary spherical shocks, such as the solar wind termination shock. In addition to the two well-known spectral regions characterized by a power-law momentum dependence and a high-energy cut off, This consists of an enhancement of the cosmic-ray intensity just below the cut off similar features have been seen previously in multidimensional models and cosmic-ray modified shocks, where they were explained by acceleration and drift in the latitudinal direction along the shock face and decreasing effective shock compression ratio, respectively We show that a similar bump may be obtained in a purely spherically symmetric geometry with no drifts, and that this effect may also have contributed to the previous results. We attribute this effect to increased shock acceleration efficiency at certain energies. We also demonstrate that a one-dimensional planar shock with a reflecting wall upstream can give a similar effect. We conclude that care is necessary in interpreting observed bumps in any given situation.

Computational Numerical Methods for Solving Nonlinear Problems

Gurusharan Kaur & Jyoti Gupta

Career College, Bhopal (M.P.)-India

Sri Sathya Sai College for Women, Bhopal (M.P.)-India

Email: kgurusharan@gmail.com, jyoti.gupta1709@gmail.com

Abstract: This paper will make it possible to tackle difficult non linear problems and deepen their understanding of problem solving using numerical methods. Multipoint methods are of great practical importance, as they determine sequences of successive approximations for evaluative purposes. The method involved here is beneficial to achieve the highest computational efficiency and accuracy of solution. It provides a deep understanding of the usefulness of each method which is supportive to a wide range of research areas along with many numerical examples. The rapid development of digital computers and advanced computer arithmetic have created a need for new methods useful for solving practical problems in a multitude of disciplines such as applied mathematics, computer science, engineering, physics, financial mathematics, and biology. In a clipped way, it enables to implement a wide range of useful and important numerical algorithms for solving research problems. It also illustrates how numerical methods can be used to study problems which have applications in engineering and sciences, including signal processing, control theory and financial computation. Further, it facilitates a deeper insight into the development of methods, numerical analysis of convergence rate and very detailed analysis of computational efficiency. It is a powerful means of learning by systematic experimentation with some of the many fascinating problems in science includes highly efficient algorithms convenient for the implementation into the most common computer algebra systems such as Mathematica, MatLab and Maple.

***k*-Lipschitzian Mappings On Hyperconvex Metric Space**

Qazi Aftab Kabir^{1*}, Rupali Verma², Rizwana Jamal³

^{1,3} Saifia Science College Bhopal, (M.P.)-462001(India)

²Institute for Excellence in Higher Education, Bhopal, (M.P) - 462016 (India).

Email: qaziaftabkabir@gmail.com, rupali.varma1989@gmail.com, rizwana.jamal@yahoo.co.in.

Abstract: In this paper we established a fixed point theorem for non-expansive mappings in hyperconvex metric space which generalize the fixed point theorem to the case of uniformly *k*-lipschitzian mappings in hyperconvex metric space. Our results are the extensions of the results obtained by kabir *et.al* [6] to the case of hyperconvex metric space. We conclude with an example to support our main results.

Keywords: Fixed point theorem, hyperconvex space, uniformly *k*- lipschitzian mapping, nonexpansive mapping.

Fixed point results for F- contractive type mappings in Cone b-metric spaces

M.S. Chauhan¹, Rajesh Shrivastava², Rupali Verma³ and Qazi Aftab Kabir⁴

^{1,3}Institute for Excellence in Higher Education, Bhopal, India.

²Govt. Science and Commerce College Benazir, Bhopal, India.

⁴Saifia Science College Bhopal, India.

Email: dr.msc@rediffmail.com, rajeshraju0101@rediffmail.com, rupali.varma1989@gmail.com, qaziaftabkabir@gmail.com,

Abstract: In the present paper, we define F -contractive type mappings in Cone b-metric space and prove some fixed point theorem. Our main result unifies, generalizes and improves existing results in F -contractive mappings, b-metric space and Cone b-metric space in the literature.

Keywords: Fixed point; b-metric space; Cone metric space; Cone b-metric space; F -contraction

AMS Subject Classification No (200): 47H10; 47H09; 54H25

A Review on Performance Analysis and Flow Features of Swirl Diffuser in a Floor Based Air Conditioning System

Deenoo Pawar¹, Anil Chourasia², Sandeep Mahore³ and Sachin Kumar Nikam⁴

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: dinupawar2011@gmail.com, achourasia0112@gmail.com, sandeepm@lnct.ac.in, sachinn@lnct.ac.in

Abstract: An air diffuser is the mechanical device that is designed to control the characteristics of a fluid at the entrance to a thermodynamic open system. Diffusers are used to slow the fluid's velocity and to enhance its mixing into the surrounding fluid. Swirl diffusers can create better air mixing to enhance indoor air quality and help achieve compliance through air change effectiveness measure. Swirling vanes are used in air diffusers to create swirling outflow jet, so that more rapid mixing with ambient air can be achieved. The air change effectiveness calculation depends strongly on the flow characteristics produced by the diffuser outlet that vary considerably between different modelling set ups. Proper calibration and correct definition of performance related parameters are important to affect the radially diffusing flow pattern. This study demonstrates the common approaches, identifies the critical design parameters, analyses and discusses the differing outcomes in terms of flow pattern, air distribution.

Keywords: Air swirl, Diffuser, Effectiveness, Swirling Blades Angle, Air Flow

Mathematical Modeling of Dilute Biphasic Fluid Flow in Industrial Aero-cyclone Dust Separators

A N Sinha¹, V N Bartaria² and Rakesh Dwiwedi³

^(1,2)Lakshmi Narain College of Technology, Bhopal (M.P)-India

³Chief Manager , CCL Headquarte (Coal India Ltd.), Ranchi (Jharkhand)

Email: directoracademics@lnct.ac.in, vnbartaria@lnct.ac.in

Abstract: Cyclone is a device used for removal of dust in industrial complex having the biphasic fluid of air-dust mixture. A standard reverse flow cyclone with tangential inlet is the basic model based on empirical formulae derived by experiments which is exhaustively used in industry with comparatively less efficiency. Design analysis based on the governing equations of two phase dilute fluid flow will improve the efficiency of Cyclone. Though the operating principle of a cyclone is very simple, the turbulent flow-field in a cyclone is very complex due to presence of swirl and interaction between particles, fluid and walls. A tangential entry and cyclone geometry give rise to a strong swirling flow. The flow acquires a rotational movement along the cyclone wall (free or outer vortex) and it descends down to a certain axial location near the cyclone bottom where the axial velocity acquires a reverse flow (forced or inner vortex) towards the upward direction and finally exit through a central duct known as vortex finder. Particles entering the cyclone are rebound, re-circulated and re entrained all along the outer and inner vortex. Consequently, the variables controlling the centrifugal force become highly complex. The primary purpose of vortex finder (air outlet) is to guide the dust particles to a central point for easy handling and disposal.

The governing equation for the turbulent, steady, isothermal and incompressible fluid flow in a cyclone is given by the Navier Stokes equation. The integration of the force balance on the particle yields the trajectory of a particle and the same equates the particle inertia with the forces acting on the particle. Navier-Stokes equations for turbulence modeling of cyclone flow field uses Reynolds averaging (time averaging) that yields the solution of exact Navier Stokes equations into the mean (time averaging) and fluctuating Components. , the discrete phase has been considered for modeling dilute phase industrial cyclone in this work.

The Finite volume technique is used in this work on the approach to satisfy the integral form of the Navier Stokes equations to suitable approximation for each of the many contiguous control volume which cover the solution domain. Based on FVM, CFD tool is used to understand the complex flow structures typical of cyclones for optimal design of it and make possible to exclude the need of experimental studies, a cumbersome ,inefficient, time consuming based on empirical formulae & thumb rules.

Fuzzy EOQ Inventory Model Using Trapezoidal Fuzzy Number with Shortages

Sumit Pratap Singh

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: prof_sps@yahoo.co.in

Abstract: In this paper, an EOQ inventory model with shortages has been considered by using Fuzzy. Our aim is to optimize the total cost and the order quantity for the proposed fuzzy EOQ inventory model. The Trapezoidal fuzzy numbers have been introduced in order to achieve this goal. The computation of economic order quantity (EOQ) is carried out through defuzzification process by using signed distance method. To illustrate the results of the proposed model, we have given examples and presented the computational results.

Keywords: EOQ, Fuzzy Inventory model, Trapezoidal Fuzzy number, Defuzzification, Shortages.

Bayesian Approach for a Periodic Review Inventory Model with Emergency orders using Weibull Distribution for Demand Function

Sumit Pratap Singh

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: prof_sps@yahoo.co.in

Abstract: In this paper we consider a periodic review inventory model. we consider demand function as a random variable which follows weibull distribution with two parameters λ and β . There is provision for placing order only at discrete time points in periodic review inventory system. If the time between two consecutive review is large in the presence of random demands, there could be heavy shortages, and the profitability of the system could suffer more so when the shortage cost is high. However it may not be feasible/profitable to carry a high level of stoke in anticipation of the uncertain demand especially if the holding cost is significant to meet the excess demand in such situation, one or more emergency orders can be placed before the end of review period. Taking into account the nature of the demand and the supply source, the timing and size of the emergency order can be determine optimally. Therefore for the optimization of the model an accurate estimation of demand is important.

Fractional Integral Operators Associated with certain Generalized Hypergeometric Function for Real Positive Definite Symmetric

Anamika Dubey

APS University Rewa (M.P)-486003 India

Email:

Abstract: In the present paper, fractional integral operators related with I-function for real positive symmetric definite matrix have been talked about .These operators have a wide scope of uses in the field of mathematical physics and linear differential equations .Various special cases of our operators have been referenced.

Keywords: Hypergeometric Function, I-function

HR Management and Employee Performance Using Ethics: A Critical Analysis

Hema Rathore

Madhyanchal Professional University, Sehore (M.P)-India

Email: krati.h12300@gmail.com

Abstract: Recent corporate changing aspects have led to the developing attentiveness in business ethics, both in academia and in the professional practice. Nevertheless, ethical hiatuses endure to happen in human resource management activities, leading HR academics and professionals to reconsideration what to do to reinvent new strategies to successfully manage ethics in HRM functions. Performance is understood as achievement of the organization in relation with its set goals. It includes outcomes achieved, or accomplished through contribution of individuals or teams to the organization's strategic goals. The term performance encompasses economic as well as behavioural outcomes. The objective of this critical literature review therefore is to establish the role ethics can play in human resource management to improve organizational performance. The methodology used was critical review of relevant literature with the scope of the study encompassing qualitative research of theories and comparative nature of ethics in HRM.

Keywords: Employee Performance, Ethics, Human Resource Management, Ethical climate, HR academics.

Application of Graph Theory in Airline Transportation Control

Sanjay Kumar Bisen¹ and Brajendra Tiwari²

¹Govt. Gandhi College Balaji Mehona, Bhind (M.P)-India

²R.K.D.F University Bhopal (M.P)-India

Email: drsanjaykumarbisen@gmail.com

Abstract: Graph theory mathematics study of how collections of points can be connected is used to day to study problems in economics, physics, chemistry, sociology, and communication and counts other fields. The analysis of airline networks has focused on easily quantifiable characteristics of the countries as well as the basic topological properties of the networks. The coefficient of determination attests to the fact that numerous pertinent causal factors remain incident field. The numbers of vertices,

Keyword: Airline networks, Graph Networks, weighted Graph, Graph Modeling, Graph coloring

A Mathematical Model for Study Breast Cancer Development and Analyze their Prevention and Treatment

Deepika Basedia¹, Rajesh Shrivastava², Keerty Shrivastava³ and Ramakant Bhardwaj⁴

¹Laxmipati Institute of Science and Technology, Bhopal (M.P) -India

²Dr. Shyama Prasad Mukherjee Science & Commerce College, Bhopal (M.P) -India

³Govt. BHEL College, Bhopal (M.P) -India

⁴Amity University, Kolkata (W.B.) -India

Email: deepikabasedia@gmail.com, rajeshraju0101@rediffmail.com,

Abstract: Mathematical modeling is art of translating real world problems into mathematical problems, solving the mathematical problems and interpreting these solutions in the language of the real world. A mathematical model is a description of a system using mathematical concepts and language. Breast cancer is the second most commonly diagnosed cancer and leading cause of cancer death for women worldwide. Breast cancer (BC) is the main cause of cancer mortality in women. Breast cancer accounts for approximately 40% of all the cancer types in women. Computational and mathematical models are gradually being used to help us understand the breast cancer. The goal of this research is to improve the accuracy of predicting the breast cancer (BC) development and their accurate treatment using the ordinary differential equations, partial differential equation and interpolation formulas for mathematical model

Keywords: Mathematical modeling, Breast cancer, Carcinogenic agents, Cancer treatment

A Mathematical Model for the Slip Condition of the Blood flow through a Stenosed artery using Casson-fluid flow

Ajay Kumar¹, R.S. Chandel², Rajesh Shrivastava³,
Keerty Shrivastava⁴ & Sanjeet Kumar⁵

¹ Technocrats Institute of Technology, Bhopal (M.P)-India

²Government Geetanjali Girls College, Bhopal (M.P)-India

³Government Post Graduate BHEL College, Bhopal (M.P)-India

⁴Government Science and Commerce College, Benazir Bhopal (M.P)-India

⁵Lakshmi Narain College of Technology & Science, Bhopal (M.P)-India

Email: ajaykumarrgv@gmail.com, rs_chandel2009@yahoo.co.in,
keertyshrivastava@yahoo.in, rajeshraju0101@rediffmail.com, sanjeet_418@yahoo.com

Abstract: The mathematical model is developed by considering blood as Casson fluid through the asymmetric artery with the stenosis. The non-Newtonian fluid behaviour is characterized by using Casson-fluid flow model. The analytic expression for flow rate, resistance to flow and skin friction are derived by using this model. We observed that the flow rate decreases when the yield stress and viscosity coefficient increases, the skin-friction increases with the increase of yield stress in presence of slip velocity for velocity coefficient parameter. The results are derived in detail with the help of graphs for the variation of different flow parameter. Flow rate, resistance to flow, and skin-friction and impedance analysis of the casson fluid have been shown graphically by varying the yield stress.

Keywords: Stenosis; artery blood flow, flow rate, blood flow and Casson fluids model

Mathematics Subject Classification [MSC] 2010 No.: 76Z05, 92C35

Some Important Results on Fixed Point Theorem using Generalized Metric Spaces

Rakesh Kumar Verma

Sagar Institute of Research & Technology Excellence-Bhopal (M.P)-India

Email: rakeshvr54@gmail.com

Abstract: In this paper we shall study the some important results on fixed point theorem using the generalized metric spaces. Some important generalization in previous paper of Kannan's fixed point theorem in the ordinary metric space and Das's fixed point theorem in generalized metric space. We will work the paper of Ali Fora, Azzeddine Bellour and Adnan Al-Bsoul regarding generalized metric space.

Keywords: Fixed point, Generalized metric space.

The Involving in I-Function of Two Variables and General Class of Polynomials

Aradhana Mishra¹, Neelam Pandey² and Poonam Mishra¹

¹APS University Rewa (M.P.)

²Govt. Model Science College Rewa (M.P.)

Email: rewapoonamm@gmail.com

Abstract: This paper presents in the some derivative formulas of I- Function of Two variables involving general class of polynomials. The well known H-function of one variable defined and proved the H-function as a symmetric. The H-function is often called fox's H-function. Later on many researchers studied and developed H-function. Introduced a new function in the literature namely the I-function which is useful in Mathematics. Physics and other branches of applied mathematics. In the present paper we establish derivative of I-function of two variables involving general class of polynomials. The generalized derivatives of product of general class of polynomials and I- function of two variables transformed as I-function of two variables but expression involving more terms. Also one can find same formulae involving general class of polynomial, I-function of r variables. The special case of our derivatives yields interesting result;

Keywords: I-function; Rathie Arjun A new generalization of generalized hypergeometric function.

Classification of Large Data Set for Social Websites using Hadoop

Rajendra Gupta and Meenakshi Dayal

Rabindranath Tagore University Bhopal (M.P)-India

Email: rajendragupta1@yahoo.com, mons.dayal@gmail.com

Abstract: Large data set is a kind of collection of **data** in a **huge size**. Large data set is a term used to define a group of data that is large in size and yet growing mounting with time. This data is so large and also complex that none of the conventional data management tools are able to store it or process it efficiently. From blogger post, there data to Google using online search to predict incidence of the Twitter, YouTube, Instagram and Facebook are using troves of information. Online and offline actions are being chased, gathered, and analyzed at dizzying rates. Facebook or Google retrieve the data like what application user install they verify and access with user permission allow contact, photo, video and if user connect with and check the demand of the user and notify, using various applications on our computer, can be recorded and analyzed. We can find this analyze to splurge on weekdays. We can be more efficient at work by realizing we spend time more than we thought on Facebook. These are stored in Data warehousing and retrieve data through data mining are connected terms, as is NoSQL. With data firmly in hand and with the ability given by large data set using flume in hadoop Technologies to effectively store and analyze this data, we can find answers to these questions and work to enhance every aspect of our behavior. Twitter, Facebook, Instagram, Google can know every post and searching you ever viewed by analyzing large data gathered over the years. Facebook can analyze large data and tell you the birthdays of people that you did not know you knew. With the initiation of many digital modalities all this data has grown to large data and is still on the rise. In the end large Data technologies can exist to improve decision-making and to provide greater vision faster when needed but with the downside of loss of data secrecy.

Keyword: Large Data Set, Twitter, Facebook data set, flume in Hadoop, MapReduce

Incomplete Mittag-Leffler Function

Dharmendra Kumar Singh and Saurabh Porwal

UIET, CSJMU, Kanpur (U.P)-India

Abstract: This paper devoted to the study of incomplete Mittag-Leffler function and some of its properties in terms of incomplete Wright function.

Keyword: Mittag-Leffler function

Mathematics Subject Classification (2000): 33E12, 33B15, 11S80.

Extreme Values Analysis for Finding Outliers Detection Using Machine Learning to Detect Predicted Data Points

Ashish Jain

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: ashishj@lnct.ac.in, jainashish1302@gmail.com

Abstract: An outlier is usually measured as an observation which is extensively found distant from the other well thought-out observations. In the era of ready-to-go analysis of n-dimensional datasets, data quality is essential for economists to guarantee robust results. Many machine learning algorithms are sensitive to the range and distribution of attribute values in the input data. Outliers in input data can skew and mislead the training process of machine learning algorithms resulting in longer training times, less accurate models and ultimately poorer results. Even before predictive models are prepared on training data, outliers can result in misleading representations and in turn misleading interpretations of collected data. Traditional techniques for outlier detection tend to exclude the tails of distributions and ignore the data generation processes of specific datasets. Various methods for detecting different kinds of outliers in high-dimensional data sets from two different perspectives, i.e. detecting the outlying aspects of a data object and detecting outlying data objects of a data set. N-dimensional data can be seen as part of the variety challenge of machine learning.

Fuzzy EOQ Model for Deteriorating Items with Stock-Dependent Demand and Partial Backlogging

Yogendra Kumar Rajoria¹, Anand Chauhan² and Preeti Poswal³

KR Mangalam University, Gurugram, (Haryana)-India

Graphic Era University, Dehradun, (Uttarakhand)-India

Email: indiadrnanandchauhan81@gmail.com,
yogendrarajo@gmail.com, preety2128@gmail.com

Abstract: In this paper, we have considered an economic order quantity inventory model with deteriorating items with stock-dependent demand and Partial Backlogging under fuzzy environments by employing trapezoidal fuzzy numbers. A fully-fuzzy inventory model is developed where the input parameters and decision variables are fuzzified. For this fuzzy model, an expected value method of defuzzification is employed to find the estimate of the profit function in the fuzzy sense. In addition, a rigorous methodology is constructed to examine for the optimal solution of fully-fuzzy inventory model. The optimal policy for the developed model is determined using the proposed algorithm after defuzzification of the profit function. Finally, a numerical illustration is provided in order to define the sensitiveness in the decision variables with respect to fuzziness in the components.

Keywords: Fuzzy, Deteriorating item, Partial Backlogging, EOQ

Comparison of Wavelet and Fourier Transform-A Case Study

Amit Tanwar¹, Rahul Boadh², Yogendra Kumar Rajoria³ and Mina Yadav⁴

K. R. Mangalam University, Gurugram, (Haryana) India

Email: amittanwar2190@gmail.com, rahulboadhmsc26@gmail.com, yogendrarajo@gmail.com, yadav.mina85@gmail.com

Abstract: The wavelet analysis is the advance based on Fourier transform and it is an innovation of the Fourier Analysis. Wavelet transforms are a mathematical means for performing signal analysis when signal frequency varies over time. Wavelet analysis is an exciting new method for solving difficult problems in mathematics, physics and engineering. Fourier transform is a powerful tool for analysing the components of a stationary signal. But it is failed for analysing the non-stationary signal whereas wavelet transform allows the components of a non-stationary signal to be analysed. Both the Fourier and wavelet transforms measure similarity between a signal and an analysing function. Both transforms use a mathematical tool called an inner product as this measure of similarity. A comparative study of Fourier and Wavelet transforms has been conducting in the present study and the main goal of this study is to find out the advantages of wavelet transform compared to Fourier transform.

Keywords: Fourier transform, wavelet transform, time-frequency, signal analysis, inner product.

Customization of the WRF model over Gurgaon region by Sensitivity of PBL schemes for their application of Pollutant Dispersion

Neelam Sharma¹, Rahul Boadh² and Ravendra Singh³

K. R. Mangalam University, Gurugram, (Haryana) India

Email: neelamsharma.sharma6@gmail.com, rahulboadhmsc26@gmail.com, ravendraibs@gmail.com

Abstract: Accurate simulations of surface meteorological variables are important for the transport and dispersion of air pollutants and air quality in the lower atmosphere. In this study, the surface meteorological variables over Gurgaon region were simulated using the Advanced Research Weather Research and Forecasting (WRF-ARW) mesoscale model. To study the evolution of PBL parameters and the thermo dynamical structure, the sensitivity tests were conducted with five different planetary boundary layer (PBL) schemes (Yonsei University, Mellor–Yamada–Janjic, Asymmetric Convective Model v. 2, Mellor-Yamada Nakanishi and Niino Level 2.5 PBL and Quasi-Normal Scale Elimination) and three different horizontal grid resolutions (27, 9 and 3 km) by using the $1 \times 1^\circ$ NCEP Final Analysis meteorological fields for initial and boundary conditions. After carefully examination of the simulated parameters with the available in situ data, the present results suggest that PBL schemes, namely YSU and ACM2 performed better on behalf of the boundary-layer parameters and may useful for pollutant dispersion studies.

Keywords: Planetary boundary layer, WRF, mesoscale, thermo dynamical structure

Analysis of Average Rainfall Phailin Cyclone by using Double Integration Technique

Agnivesh Tiwari¹, Yogendra Kumar Rajoria² and Rahul Boadh²

K. R. Mangalam University, Gurugram, (Haryana) India

Email: rampoonam1994@gmail.com, yogendrarajo@gmail.com, rahulboadhmsc26@gmail.com

Abstract: India's eastern coastline is one of the most violent wind inclined regions on the planet. Despite the fact that the coastline of Orissa has been just about 17% of the Indian eastern coastline, yet Orissa has been influenced by about 35% of all cyclonic and serious cyclonic tempests that have crossed the eastern coastline and related tempest floods that have been regularly immersing huge areas along the coasts. A Cyclone is an enormous scale air mass that turns around a solid focal point of low climatic weight caused due to low atmospheric pressure over oceans resulting in rainfall at coastal region. We will calculate average rainfall during the cyclone Phailin using Double integration

Optimization of Some Transportation Problem by Proposed Method

Dipti Yadav¹, *Yogendra Kumar Rajoria² and Ravendra Singh³

K. R. Mangalam University, Gurugram, (Haryana) India

Email: diptiyadav48@gmail.com, yogendrarajo@gmail.com, ravendraibs@gmail.com

Abstract: The transportation model is a typical case of LPP (Linear Programming Problem) in which the main objective is to transport people or goods from multiple origins to different points at minimal cost, like air, water and land transport including railway and road transport. In this paper, a method for finding an optimal key solution in short iterations is proposed and obtained result is compared with Vogel's approximation method. This method is used for both cases of large and small size transport problem. A numerical example is also given to examine the validity of the transport model.

Keywords: Transportation, Linear Programming Problem, Vogel's approximation method

A Mathematical Model to Solve the Huxley Equation by New Homotopy Perturbation Method

Ravendra Singh¹, Yogendra Kumar Rajoria² and Dinesh Kumar Maurya³

K. R. Mangalam University, Gurugram, (Haryana) India

Email: ravendraibs@gmail.com, yogendrarajo@gmail.com, dkmupc@gmail.com

Abstract: In this paper, New Homotopy Perturbation Method (NHPM) is introduced for obtaining solutions of non-linear Huxley equations. The approximate solutions of the Huxley equations are compared with the solution by using Adomian's decomposition and variational iteration method as well as with the exact solutions. The present method is very simple, effective and convenient analytical method with small computational overhead. The capability and reliability of the method, several examples are provided and MATLAB used to calculate the series obtained from NHPM.

Keywords: Adomian's decomposition method, Homotopy Perturbation Method, Huxley equation.

Health Risk Assessment by using Fuzzy Logic Application

Gunjan Kalra¹, Rahul Boadh² and Yogendra Kumar Rajoria³

K. R. Mangalam University, Gurugram, (Haryana) India

Email: gunjankapoor089@gmail.com, rahulboadhmsc26@gmail.com, yogendrarajo@gmail.com

Abstract: The fuzzy logic (FL) application has been used first time in thirty six year ago (1982) for purpose of insurance. In present, the insurance industry has several areas with latent applications for FL. In this paper involved to diagnosis the health risk which is related to Blood Pressure and Kidney function. The Glomerular Filtration Rate (GFR) has been used for investigate the level of the blood pressure with the help of kidney function. For this purpose, in this study FL control system has been used to represent the factors which may cause the hazard for human health and analysis by using rule base factor which was implemented in MAT Lab. The present study, advocates that FL may be suitable to take appropriate decision at the right time for giving treatment to the patients immediately and it may be monitoring from the treatment in future.

Keywords:-Fuzzy logic, Blood Pressure, Kidney Function, Diagnosis, Health risk

Analysis of Aircraft activity by using method of Numerical Integration

Kabir Chaudhary¹, *Yogendra Kumar Rajoria² and Ravendra Singh³

K. R. Mangalam University, Gurugram, (Haryana) India

Email: kabirchaudharykirthal@gmail.com, yogendrarajo@gmail.com, ravendraibs@gmail.com

Abstract: The takeoff and landing of an airplane are the most perilous periods of flight in real environment. So, the investigation regarding takeoff and landing performance play a vital role for airplane structure and security. In the paper, a high-accuracy numerical calculation for takeoff and landing execution by force analysis to develop dynamic equations, which sets up and tackles the conditions of elements during departure and landing process. The proposed strategy is equipped for figuring departure and landing execution under various situations. The impacts of height, temperature, departure and landing weight and wind speed are analyzed.

Keywords: departure execution, landing execution, Numerical integration

Use of Fuzzy Expert System for Investigating the Child Anaemia-A Case Study

Rahul Boadh¹, Meena Rawat² and Yogendra Kumar Rajoria³

K. R. Mangalam University, Gurugram, (Haryana) India

Email: rahulboadhmsc26@gmail.com, rawatmeenasu@gmail.com, yogendrarajo@gmail.com

Abstract: In present, the fuzzy logic applications are mostly using to investigating medical disease. In this study the Fuzzy Expert System (FES) has been introduced to define the child anaemia. Anaemia is haematological disorder and the most common identifying in children. The fuzzy expert system has been designed to investigate the level of iron paucity in children. For this propose, the laboratory records have been obtained for child anaemia patients, the applicable factors have quantified. The FES for disease risk, child anaemia was shortly described. This system help to physician in the decisions risk. This study advocate that, in many cases FES can help to the doctors in diagnostics, treatment of sickness and etc. The number and the other disagreement that support our claim can be found in this study.

Key words: Fuzzy expert system, medical disease, Child anaemia, diagnostics, treatment.

Application of CFD Numerical Modeling in Air Quality Assessment and Executing Mitigation Measures

A N Sinha and V N Bartaria

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: directoracademics@lnct.ac.in, vnbartaria@lnct.ac.in

Abstract: Air quality primarily describes the pollutants contained in the air. As it appears to have grave pollution problems, real time air quality index (AQI) in most of the major cities of the world has now become a major concern to know the transient air quality levels. Various indices for measurement of air quality have been developed and are being used by different countries. The measurements are indicative of concentrations of air pollutants quantitatively. Air quality assessment indicative of various quantities may either involve the direct measurement of these quantities or deterministic of the impact of pollution and possible hazards. Fractional concentration of criteria pollutant species such as volatile and semi-volatile organic compounds and natural or anthropogenic aerosols determine the quality of air.

Apart from the measurements, air quality estimations may also be performed using Gaussian plume model and Solution of three dimensional Navier-Stokes equations and pollutant transport equations. The Computational Fluid Dynamics (CFD) modeling needs the identification of the relevant physical process describing the pollutants dispersion into the atmosphere. These processes involve the emission and transport of pollutants which may take place by bulk convection, turbulent dispersion and gravity effects. Adhesion among other forces and factors cause the settling of particle pollutants on the physical surfaces. Recombination reactions and electrostatic precipitation may also contribute in the pollutant deposition. Numerical modeling of air pollution problems with the help of CFD provides the detailed description of physical sources of pollutants, meteorological processes and changes occurring in physical and chemical behavior of pollutants effectively when the governing equations based on the assumptions of the mass, momentum, energy and pollutant species conservation of the mathematical model are in the appropriate form. The solution is obtained by solving the mathematical equation numerically.

This paper deals with the possible solution of the most concerned pollution problem and especially in dealing with the problems of smog forming in major cities and threatening the human life. It is suggested to perform a real time modeling of the smog problem by 3D modeling of the smog field using CFD and if coupled with the real time measured environmental data, simulation results will provide the severity of the pollution in the form of contours, plots and quantity in order to execute appropriate mitigation measures.

Increase network lifetime optimisation efficiency and increase the stability period using the Gravitational Energy Sensitive Energy Hierarchy Protocol

Mohit Singh Tomar¹, Deepak Jain², Ankur Pandey³

¹Shri Jagdish Prasad Jhabarmal Tibrewala University, Jhunjhunu (RAJ.)-India

^{2,3}Sagar Institute of Research & Technology Bhopal (M.P.)-India

Email: mohitishere7@gmail.com

Abstract: The need for wireless sensor networks has been increased day by day, but when we work on it we find two well-known major problems that are cluster head selection and routing for this purpose decreasing their lifespan and increasing the number of dead nodes. The energy savings of each Node sensor are associated with high computational complexity, which depends on the monitoring of algorithms. This study developed a community base algorithm called "A Gravitational Energy Sensitive Energy Hierarchical Protocol," which increases its value but decreases the network life of dead network nodes. Technique where each node has heterogeneity-ordained energy levels of a protocol that selects a (cluster head) CH separately on the basis of their initial energy relative to the other nodes in the selected network. We provide some test results together with plotted results in this paper. In addition, analysis and simulation was performed with the implementation of the internal energy node 0.5, 1 J, 1.5 J, and 2J in different cases. After the analysis results have been achieved we have found that our algorithm provides the best results compared with other results of different algorithms. This is an important task, and in small and large networks our GESEHP protocol can produce improved results. All of this simulation work was carried out in Matlab.

Keywords: Gravitational, Efficiency, Throughput, IEEE 802.11, unicast and broadcast packet, network, L-LEACH, Quality of Service, W-LEACH, routing protocol, Energy Sensit.

About Families of Pairwise Connected Sets

Anjali Srivastava¹ and Rohit Gaur²

¹School of studies in Mathematics, Vikram University, Ujjain (M.P.)- 456010- India

Email: anjalivuu@gmail.com r.gaur0710@gmail.com

Abstract- The notion of connectedness in bitopological spaces was introduced and studied by W.J. Pervin and I.L. Reilly. Continuing the study we prove a few results concerned with a family of connected sets in bitopological spaces.

Key Words- Pairwise connected spaces, Connectedness in bitopological spaces, Pairwise mutually separated spaces.

AMS Subject Classification- 54A05, 54A99, 54D05

Dual Cryptography with Mobile GPS location Mechanism

Dinesh Kumar Moriya and Sharad Pathak

Govt. MLB Girls (Autonomous). PG College, Bhopal (M.P)- India

Email: dinesh.moriya@gmail.com

Abstract: Cryptography is the type of security which internet usually uses and in today's world its not sufficient to safeguard our data and account. Here we come with a new concept of Dual Cryptography (DCPT) for the user and the communication channel as well. By the time its mandatory to use Location (MGPS) wise security which is possible through Mobile Computing. Location and Cryptography both are used in such a different way to provide internet security. Location Based Cryptography (LBDC) is the work which actually works on today's scenario.

Keywords: Cryptography, DCPT, MGPS, LBDC.

Feeling Detection dependent on Images and Captions on Social Media

Aditya Patel

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: adityap@lnct.ac.in, adityapatelmail@gmail.com

Abstract: Nowadays, Internet has grow to be an crucial element in every person's lifestyles. Social networking has regularly grow to be a recurring for people to submit their photos, opinions and remarks. People percentage their emotions on line in a completely casual language. Thus, it is very tough mission to research actual sentiment hidden inside the text of natural language. Emotion detection is the sphere of study that analyses people views and feelings. Human emotion can be expressed through numerous approach which include speech, facial expressions, gestures and textual facts. This paper proposes the gadget which makes use of present emotion detection thru facial features using deep mastering and supports it with the evaluation of textual information received thru captions of pics on social networking websites to ensure greater accurate outcomes. There is no characteristic on social networking sites to kind feelings of photos which motivate us to classes posts based on emotions. Emotion detection from each captions and photos collectively is efficient due to the fact most effective text isn't always enough to apprehend the feelings of customers. This hybrid approach offers promising results in both the class of feelings as well as in acting emotion detection.

Keywords: Emotion detection, Convolutional Neural Networks, Social Networks, Deep Learning, Sentiment Analysis

Content Based Facial Emotion Recognition Model utilizing Machine Learning Algorithm

Aditya Patel

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: adityapatelmail@gmail.com

Abstract: Emotion reputation or sentiment analysis is recognized as a critical studies topic in pc vision community. The challenges include identity of face, popularity of accurate emotion, suitable database and so forth. We have proposed and implemented a fashionable Convolution Neural community (CNN) building framework for emotion popularity. The model is formalized by means of developing a coincident gadget which fulfills the duties of face detection and emotion classification the usage of our proposed CNN structure. The version is verified using the FER-2013 dataset. In the proposed paintings, we talk the applicability of the proposed CNN model. This model lays a valuable evaluation of the effect of changing the network size, pooling, and dropout. For a given model, the very last accuracy at the validation facts is round 63%.

Survey on Photoluminescence of Some Recent Work on Silicate Based Phosphors

Anjali Yadav¹ R.K. Kuraria¹ and S.R. Kuraria³

Govt. Science College Jabalpur, India 482001

Govt. M.H. College of Home Science and Science Jabalpur, India 482001

Email: rkkuraria@rediffmail.com, s.anjaliyadav.s@gmail.com

Abstract: Photoluminescence is the process, in which the excitation is accomplished by the absorption of photons. The radiation sources may be infra-red, visible, ultraviolet or X-ray. The fluorescent lamp used in household and general lighting is the principal example of this type of luminescence. The silicate matrix is a typical melilite. Phosphors based on silicate material are usually low cost and are chemically and physically stable. They have been studied widely with Eu²⁺ doping, which shows that a blue emission and long persistent luminescence by co-doping with some other rare earth ions. We focus on the development of new silicate phosphors for a white LED. In the europium doped silicate system, four LED phosphor candidates found luminescent properties under near UV and visible excitation were investigated for the new Eu²⁺ doped LED silicate phosphors. These new phosphors have a relatively strong absorption band in a long wavelength region.

Common Fixed Point Results in Menger Spaces

Prashant Namdeo and Subhashish Biswas

Kalinga University, Raipur (C.G.) India

Email: prashantnamdeo75@gmail.com, deb12rishika@gmail.com shubhb@yahoo.co.in

Abstract: The purpose of the paper is to prove a common fixed point theorem in Menger spaces by using five compatible mappings.

Keywords: Menger space, t-norm, Common fixed point, Compatible maps, Weak - compatible maps.

Application of Graph theory in operations Research

Priyanka Swanker¹ and Richa Gupta²

Sarvepalli Radhakrishnan University, Bhopal (M.P)-India

Email: priyankasoni071987@gmail.com

Abstract: One of the common themes in operation research is the modeling approach, many accurate model of operations research. Problems turn out to be intractable when subjected to standard technique this research paper show that how graph theory and networks may be profitably used to model certain discrete operations research problem from a different view-point effective algorithms.

Keyword: Graph, Direct graph, Graph networks, Simple graphs



Emergence of Cloud Computing in Higher Education

AbhaTenguria¹, Vivek Bhardwaj² and Dinesh Kumar Moriya³

Government Maharani Laxmi Bai Girls P.G (Auto.) College, Bhopal, (M.P), India

Email: abha.tenguria@gmail.com vivek10bhardwaj@gmail.com, dinesh.moriya@gmail.com

Abstract: Cloud Computing is the term in which we are using a network of interconnected networks on the internet with the help of IAAS, PAAS, SAAS, where storage, management, processing are possible along with the processing of data beyond a local server or personal computer. Higher Education is a system for pedagogical excellence of students for higher studies along with a proper system of education, management, governmental schemes etc. This paper presents the emergence of Cloud implementation for betterment of Higher Education with the help of MOOC.

Keywords: Cloud Computing, IAAS, PAAS, SAAS, Pedagogical, MOOC

A Bingham plastic and peripheral layer model of blood flow in the presence of stenosed artery

Ajay Kumar¹, R.S. Chandel², Rajesh Shrivastava³,
Keerty Shrivastava⁴ & Sanjeet Kumar⁵

¹ Technocrats Institute of Technology and Science, Bhopal (M.P)-India

² Government Geetanjali Girls College, Bhopal (M.P)-462001 India,

³ Government Post Graduate Bhel College, Bhopal (M.P)-462021, India

⁴ Government Science and Commerce College, Benazir Bhopal (M.P), India

⁵ Lakshmi Narain College of Technology & Science, Bhopal (M.P)-462021, India

Email: ajaykumarrgpv@gmail.com, rs_chandel2009@yahoo.co.in, keertyshrivastava@yahoo.in, rajeshraju0101@rediffmail.com, sanjeet_418@yahoo.com

Abstract: The present work deals with the blood flow through the stenosis assuming that flowing blood is represented by a two layered model. We considered a two-layered blood flow model to study the axisymmetric flow of blood by assuming the core layer as Bingham plastic (non-Newtonian fluid) and the peripheral layer (Newtonian fluid) in through the stenosis in the arteries. The analytical expressions for flow rate, resistance to flow and wall shear stress have been developed in this model. We have depicts the effect of stenosis on resistance to flow and wall shear stress. This study gives an insight into the effects of slip velocity on the volumetric flow rate, resistance to flow and wall shear stress.

Keywords: Stenosis, blood flow, core layer, peripheral layer and Bingham plastic

AMS Subject Classification (2010): 76Z05, 92C35

A non-Newtonian fluid flow model for the slip condition on blood flow through a stenosed artery using power-law fluid

Ajay Kumar¹, R.S. Chandel², Rajesh Shrivastava³,
Keerty Shrivastava⁴ & Sanjeet Kumar⁵

¹ Technocrats Institute of Technology and Science, Bhopal (M.P)-India

² Government Geetanjali Girls College, Bhopal (M.P)-462001 India,

³ Government Post Graduate Bhel College, Bhopal (M.P)-462021, India,

⁴ Government Science and Commerce College, Benazir Bhopal (M.P), India

⁵ Lakshmi Narain College of Technology & Science, Bhopal (M.P)-462021, India,

Email: ajaykumarrgpv@gmail.com, rs_chandel2009@yahoo.co.in, keertyshrivastava@yahoo.in, rajeshraju0101@rediffmail.com, sanjeet_418@yahoo.com

Abstract: In this paper, the effects of boundary conditions on power-law fluid through an artery with stenosis have been studied. We considered the blood as power law fluid in this model. Numerical and computational models are developed to analyze the variation of resistance to flow, yield stress and wall shear stress across the stenotic region. The analytic expressions for flow resistance, wall shear stress with mild stenosis are derived by using this model, which shows that resistance to flow λ increases with increasing of stenosis height and wall shear stress τ increases as stenosis size increases. The results have been shown graphically at different flow characteristics.

Keywords: Physiological flow, stenosed artery, wall shear stress, resistance to flow, Power-law fluid model and slip velocity

AMS Subject Classification No. (2010): 76Z05, 92C35

Mathematical Modeling of Linear and Nonlinear Equations

Jyoti Gupta & Gurusharan Kaur

Sri Sathya Sai College for Women, Bhopal (M.P.)-India

Career College, Bhopal (M.P.)-India

Email: jyoti.gupta1709@gmail.com, kgurusharan@gmail.com

Abstract: This paper reviews some of the recent research and notes that plays an important role in mathematical modeling of linear and non linear equations. The process of developing a mathematical model is termed mathematical modeling. Mathematical models are used in the [natural sciences engineering](#) disciplines as well as in the [social sciences](#). This paper is taught that introduce the basic principles and methods that helps to explain a system and to study the effects of different equations and behavior. If all the operators in a mathematical model exhibit [linearity](#), the resulting mathematical model is defined as linear. A model is considered to be nonlinear otherwise. The definition of linearity and nonlinearity is dependent on context, and linear models may have nonlinear expressions in them. a differential equation is said to be linear if it can be written with linear [differential operators](#), but it can still have nonlinear expressions in it. In a [mathematical programming](#) model, if the objective functions and constraints are represented entirely by [linear equations](#), then the model is regarded as a linear model. If one or more of the objective functions or constraints are represented with a [nonlinear](#) equation, then the model is known as a nonlinear model. Mathematical models can take many forms, including [dynamical systems](#), [statistical models](#), differential equations, or [game theoretic models](#).

Fixed point results for contractive type mappings in Cone b-metric spaces

M.S. Chauhan¹, Rajesh Shrivastava², Rupali Verma³, Qazi Aftab Kabir⁴

^{1,3}Institute for Excellence in Higher Education, (M.P.)-India.

²Govt. Science and Commerce College Benazir, (M.P.)-India

⁴Saifia Science College (M.P.)-India

Email: dr.msc@rediffmail.com, rajeshraju0101@rediffmail.com,
rupali.varma1989@gmail.com, qaziaftabkabir@gmail.com,

Abstract: In the present paper, we define F-contractive type mappings in Cone b-metric space and prove some fixed point theorem. Our main result unifies, generalizes and improves existing results in F-contractive mappings, b-metric space and Cone b-metric space in the literature.

Keywords: Fixed point; b-metric space; Cone metric space; Cone b-metric space; contraction

AMS Subject Classification No. (2000): 47H10; 47H09; 54H25

IOT Based Smart Crop Monitoring in Farm Land**Shareya Naik¹, Rajeev kumar², Vivek Kumar³ and Utkarsh Shrivastava⁴**

Lakshmi Narain College of Technology & Science, Bhopal (M.P)-India

Email: vivekk@lnct.ac.in

Abstract: As new technologies has been invented and utilized in modern world, there is a need to bring an elevation in the field of agriculture also. A lot of researches have been made to improve crop production. In order to enhance the crop productivity effectively, it is necessary to monitor the environmental conditions in and around the field. The motive of this paper is to propose an IOT based Smart crop monitoring system which aims in making use of progressing technology i.e. IOT and Smart Farming. Internet of Things (IOT) has become a trending technology nowadays which is being used in several real time applications. IOT is a system which consists of several sensors or actuators that provides connectivity to the internet directly or indirectly. IOT based smart farming improves the entire agricultural system. As it is well known, agriculture is the backbone of our Indian economy that contributes to the overall economic growth of the country. With the help of sensors and interconnectivity, IOT in agriculture has saved the time of farmers to a greater extent and has enhanced the traditional way of farming. Online crop monitoring using IOT helps the farmers to stay connected to his field from anywhere and anytime. Also with the innovation of IOT in farming there has been drastic reduction in extravagant use of valuable resources such as water and electricity. Various different types of sensors are connected to the field that monitors and collects information about the field conditions. Collectively all the captured farm conditions are sent to the farmer through GSM technology. Thus this way farmer is able to monitor his field without being there physically. Finally, based on this thorough review, we identify current and fore coming trends of IOT in agriculture and highlight potential research challenges.

Keywords: IOT, Sensors, GSM technology, Smart farming.**Matlab A Fourth-Generation Programming Language of New Era: A Review****D. S. Saluja and Amarjeet Singh Saluja**

Govt. M. V. M. College, Bhopal,(M.P)-India

Institute for Excellence in Higher Education, (M.P)-India

Email: drdssaluja@gmail.com

Abstract: MATLAB has evolved over a period of years with input from many users. In university environments, it is the standard instructional tool for introductory and advanced courses in mathematics, engineering, and science. In industry, MATLAB is the tool of choice for high-productivity research, development, and analysis. It features a family of application-specific solutions called toolboxes. Very important to most users of MATLAB, toolboxes allow as to learn and apply specialized technology. Toolboxes are comprehensive collections of MATLAB functions (M-files) that extend the MATLAB environment to solve particular classes of problems. Areas in which toolboxes are available include signal processing, control systems, neural networks, fuzzy logic, wavelets, simulation, and many others. It is an interactive system whose basic data element is an array that does not require dimensioning. This allows you to solve many technical computing problems, especially those with matrix and vector formulations, in a fraction of the time it would take to write a program in a scalar non interactive language such as C or FORTRAN.

Some Fixed Point Results in A -Metric Space and A_b Metric Space

Suresh Nagle¹, Rajni Bhargav¹, Manoj Ughade²

Govt. MLB PG Girl's College, Bhopal (M.P) - India

Govt. J.H. Post Graduate College, Betul (M.P) - India

Email: snghelpyou@gmail.com

Abstract: Our goal of this article is to vindicate some fixed point theorems for contractive mappings in A -metric space and A_b metric space, which unify, develop and generalize most of the prevailing coherent fixed point results from the literature.

Keywords: A -metric space; A_b metric space, contractive mapping; fixed point

Some Fixed Point Theorem Satisfying General Contractive Condition of Integral Type

Himanshu Tiwari and Subhashish Biswas

Kalinga University, Raipur (C.G.) India.

Email: himanshu.tiwari.ht@gmail.com, deb12rishika@gmail.com shubhb@yahoo.co.in

Abstract: In this paper, we establish a fixed point theorem for a pair of self maps satisfying a general contractive condition of integral type. This theorem extends and generalizes some early results of Boikanyo[4]. And Jaggi and Dass [12]

Key Words: Lebesgue-integrable map, Complete metric space, Common fixed point.

AMS Subject Classification (2010): 54H25, 47H10.

CFD Modeling and Simulation in the Heat Transfer Studies in Solar Air heating

Dharam Singh and V. N. Bartaria

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: dharams@lnct.ac.in, vnbartaria@lnct.ac.in

Abstract: Solar air heater is solar energy collection device and this collected solar energy is utilized for low temperature heating purpose, agriculture drying purpose etc. The rate of conversion of solar energy to heat energy is low in solar air heater because of the nature of fluid which is air having poor thermal conductivity which influence the rate of heat transfer from the absorber plate to air. The value of heat transfer coefficient for this heat exchange is low and it can be increased by creating turbulence in flow field. The turbulence is created by providing artificial roughness on absorber plate of various geometries. In this paper the numerical modeling of heat transfer through the absorber plate has been discussed. The heat transfer in a rectangular duct of a solar air heater having trapezoidal rib roughness on the absorber plate is numerically studied by using Computational Fluid Dynamics (CFD). The effect on Nusselt number, heat transfer coefficient, velocity, and temperature parameter are analyzed. This CFD simulation is done using commercial software Fluent 6.3. The K - ϵ numerical model consisting of the governing mathematical equations based on the principles of conservation of mass, momentum and energy have been used.

Time Synchronization using Hierarchical Clustering for reliable data service in MANET

Nidhi¹, Kamlesh Chandravanshi², Sushil Kumar³,

Lakshmi Narain College of Technology, Bhopal (M.P) - India

Email: nidhi1514@gmail.com, kamlesh.vjti@gmail.com, sushilk@lnct.ac.in

Abstract: Time synchronization in any network like wired and wireless is one of the crucial issue because of synchronized the communication in between sender and receiver. In Mobile ad hoc network nodes are continuously changing their situation in a surrounding environment. The data sending and receiving is performed without any supervision or centralized communication. In this research we proposed a new time synchronization technique with multicast routing in dynamic network. The multicast routing protocol is able to perform the group communication and in each group is made from some nodes with one group coordinator and each node has different clock time. The proposed research is synchronized the clock of each mobile node according to the average time beacon of all group in MANET. The proposed multicast Average Time Clock beacon Synchronization (Avg-SYN-CLK) communication performance is improves the network performance. The proposed scheme performance is compare with the Maximum Clock Time Synchronization (MAX-SYN-CLK) beacon broadcasting technique and Asynchronies Clock Time Performance (ASYN-CLK) and observe that the proposed technique is provides better performance with minimum end to end delay and packet loss.

Keyword: Clock Synchronization, MAODV, Mobile Ad hoc, Clock Detection, Multicasting, Average Clock Time.

A smart way of Compression

Sushil Kumar

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: sushilk@lnct.ac.in

Abstract: The advancement of information technology has affected all walks of our life. Data base technology has also grown from a simple file system to data navigation system, and over a last two to three decades a majority of business institutions, organizations, industries etc. have adopted the computerization process and as a result have been flooded with data. In this report it is investigated that for experimental result shows the proposed scheme provides significant improvement in compression efficiencies. The main proposal of this report is to reduce the memory space and the transmission time and achieving good compression ratio. In this work proposed techniques manages the compressed database such that standard operations like retrievals, insertion, deletion and modifications are supported.

A Digitalized Development Competency in Industrial Internet of Things

Yedlapally Sreepada Surya¹, Ramesh Chandra Panda² and Javalkar Dinesh Kumar³

^{1,3}Lingaya's Vidyapeeth, Faridabad (Haryana), India.

²Synergy Institute of Engineering & Technology, Dhenkanal (Odisha) - India

Email: ramesh.panda.mech@gmail.com

Abstract: The competences of IoT aidproducers or investors to gain superiorprominence and insights into their further actionsthrough the effectual use of data and the tighter amalgamation of disparate systems. This opens up the leeway for producers of moving away from merely selling goods to becoming a provider of services and firming the bond they have with the end users of their products. It goes in to the heart of how an industrial manufacturer perceives itself and the extent to which digital change will be central to its tactic and therefore requires that additional care is taken and better caution is exercised. This means that IoT can offer more than traditional process efficiency improvements on the factory floor. This paper will converse the impacts of IoT and other developing technologies in making a manufacturing system automated.It will include conversation on economy, cutting-edgetechnology.

Keyword: IOT, Automation of Industry.

A Review Paper on Electro Automotive Smart Systems Using Internet of Things

Yedlapally Sreepada Surya¹, Ramesh Chandra Panda² Javalkar Dinesh Kumar³ and Itishree Mohanty⁴

^{1,3}Lingaya's Vidyapeeth, Faridabad (Haryana), India.

^{2,4}Synergy Institute of Engineering & Technology, Dhenkanal (Odisha)- India

Email: ramesh.panda.mech@gmail.com

Abstract: Electricity consumption grows up rapidly all over world during up-coming decades. Nowadays we can generate electricity through a smart way by using different techniques. By implementing a speed breakers on roads through roller mechanism. In this mechanism, by using a rack and pinion system we can generate electricity. And the second technique was traffic windmill which this method used on high ways. In this method by using a vertical axis blade we can generate electricity. And one more method was smart street lights on highways. In this method by using a sensor called LDR (light dependent resistor).

Keywords: Electricity extraction, Electricity utilization, Rack and pinion, Vertical axis wind mill.

Glaucoma diagnosis using discrete wavelet transforms and Histogram features from fundus images

Nandini Kokate¹, K.G. Kirar² and M.L. Jatav³

Samrat Ashok Technological Institute, Vidisha (MP) 464001-India

Abstract: Glaucoma is one of the main eye diseases; it cause progressive deterioration of optic nerve fibres due to increased fluid pressure. The existing methods of glaucoma diagnosis are time consuming, expensive and require practiced clinicians to understand the eye problems. Hence fast, cheap and more accurate glaucoma diagnosis methods are needed. This paper presents an innovative idea for diagnosis of glaucoma using third level two dimensional discrete wavelet transform (2D DWT) and histogram features from fundus images. The 2D DWT is used to decompose the glaucoma and healthy images and histogram features are extracted from 2D DWT decomposed sub band images. The least square support vector machine (LS-SVM) is used as a classifier which classifies the glaucoma and healthy images using the extracted features.

Results on Multivalued Mappings in Intuitionistic Fuzzy Metric Spaces

Reema Tuteja¹, Mayank Sharma² and RitujaNighojkar³

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: reematuteja32@gmail.com mayank.math80@gmail.com, ritujanighojkar@gmail.com

Abstract: In this paper we obtain some common fixed point theorems for multivalued mappings in intuitionistic fuzzy metric space containing rational terms. Wegenerelizeand extend results. Of [I. Kubiacyk and S. Sharma, Common fixed point in fuzzy metric space, J. Fuzzy Math. 11(1)and [RezapourSh.:Common fixed point of self-maps in intuitionistic fuzzy metric spaces , Mat.Vesnik 60(4)(2008), 261-268] by contributing rationalization from their previous versions.

Keywords: Common fixed point, Multivalued map, intuitionistic fuzzy metricspace.

Mathematics Subject Classification (2000). 54A40, 54H25.

An Application of Compatibility and Weak Compatibility in Intuitionisticfuzzy Metric Spaces

Mayank Sharma¹, Ramakant Sharma² and Megha Kamble³

^{1,3}Lakshmi Narain College of Technology, Bhopal (M.P)-India

²Bansal college of Engineering, Mandeep Bhopal (M.P)-India

Email : Mayanks@lnct.in

Abstract. The object of this paper is to obtain some new results in intuitionistic fuzzy metric spacesby the applicability of the property ($S-B$) and the notion of R-weak commutativity of type (Sp)and weakly compatible maps of type (Sp) and prove the intuitionistic fuzzy version of Pantstheorem. Our results are substantiated with example. The established results generalize and extends several existing fixed point results in intuitionistic fuzzy metric spaces, metric spaces and fuzzy metric spaces.

Keywords: Intuitionistic fuzzymetric space, ($S-B$) property, R-weak commutativity of type(Sp),Weakly compatible map, Common fixed point.

Mathematics Subject Classification (2010): 47H10, 54H25.

Neural Network Approach to Predict Soaked CBR of Routine Subgrade soil

Anil Kumar Saxena

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: anils@lnct.ac.in

Abstract: This study presents the application of a method of artificial neural networks for the prediction of the California bearing ratio (CBR) with routine properties of subgrade soils. A database is developed containing grain size distribution, Atterberg limits, maximum dry unit weight and optimum moisture content of the soils. A set of 231 experimental results were used to construct the ANN model. The correlation between the basic properties of soil and CBR were obtained from the trained neural network. A Commercial software MATLAB-7.5 was used for trained the ANN models, Multilayer Perceptrons neural network(or LMB model). Three Levenberg-Marquardt Backpropagation ANNs models (LMB-4, LMB-5, and LMB-6) for predicting CBR, (in which the number of input variables is changed seven to four) were employed in the analysis. In these models, the input layer consists of maximum six nodes, one node for each of the independent variables, namely % fines (Silt and clay fraction) , % of Sand content(S),% of Gravel, optimum moisture content (OMC) ,Maximum dry density (γ_d) , plasticity index (PI) , and liquid limit (W_L) respectively . The output layer consists of only one node—CBR. The strengths of the developed models are examined by comparing the predicted CBR values with the experimental values with respect to the regression coefficient (R^2) and Mean Square Error (MSE) values. In addition, the experimental results were compared to different LMB networks predicted results. It was concluded that the performance of the model with six inputs (LM-6) is better than other model.

Keywords: California bearing ratio (CBR), Neural Network, MLPN, Subgrade

A Unique VLSI Primarily Based Structure for Computation of 2D-DCT Image Compression

Prashant Chaturvedi¹ and Soni Changlani²

LNCT University, Bhopal

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: prashantc@lnct.ac.in, sonis@lnct.ac.in

Abstract:-Statistics photograph compression is the deficiency, of redundancy in statistics illustration to attain deficiency, in storage cost. The implementation and optimization of FPGA primarily based 2D-DCT with quantization and zigzag with parallel pipe lining the usage of HDL. The 2-D DCT calculation is made using the 2-D DCT separability property, such that the whole architecture is divided into two 1-D DCT separability assets and calculations with the aid of the use of a transpose buffer. The coding is simulated using Xilinx 9.2i ISE synthesized the usage of spartan-3E XC3S250. The 2nd-dct structure makes use of 600 slices, 6 I/O pins, and 4 multiplier and working frequency 135 MHz and pipe lining latency 140 clock cycles.

Keyboards: JPEG, DCT, quantization, zigzag, FPGA, Xilinx 9.2i ISE.

Human Area Networking using Red Tacton Technology

Ria Sharma¹, Pratishtha Singh² and Prashant Chaturvedi³

Lakshmi Narain College of Technology, Bhopal (M.P)-India

LNCT University, Bhopal (M.P)-India

Email: rias25344@gmail.com, pratishtha712@gmail.com, prashantc@lnct.ac.in

Abstract:-So far we've seen LAN, MAN, WAN, internet and plenty of extra networks. However now here is a new concept of "RED TACTON" which allows the communication via touching and makes the human body floor as a conversation network, this is referred to as human area community which is the rising fashion in the area of conversation. The Red Tacton takes a one of a kind technical viewpoint rather than counting on electromagnetic or light waves to hold facts it makes use of feeble electric powered discipline on the surface of the frame as a transmission medium. Verbal exchange with the aid of that is secure as the modern which flows via the frame is in very small voltage range with excessive pace network transmission direction and is viable the usage of any surface of the frame like hand, fingers, toes, face, legs or torso. It additionally works through footwear and clothing as nicely. Further to the human body, numerous conductors and dielectric may be used as transmission media and also they may be used in aggregate. Transmission velocity does no longer deteriorate in congested areas in which many people are communicating at the equal time with a maximum pace of 10mbit/sec.

Keywords: Red Tacton Mechanism, IEEE802.3, Human area network.



Indoor Positioning System using Ultra Wide-band Technology

Pratishtha Singh¹, Ria Sharma² and Prashant Chaturvedi³

Lakshmi Narain College of Technology, Bhopal (M.P)-India

LNCT University, Bhopal (M.P)-India

Email: pratishtha712@gmail.com, rias25344@gmail.com, prashantc@lnct.ac.in

Abstract: An indoor positioning machine is a network of device used to locate humans or object wherein GPS and other satellite TV for pc technology lack precision or fail entirely. UWB (excessive bandwidth, low frequency) can skip signals thru a wide type of limitations, along with wall. It can also supply accurate positioning information in a high fresh charge. A area tag of UWB indoor positioning gadget can send area information for the tracked items as much as five times according to second and also can accumulate statistics for up to two years without recharge as a consequence it has low electricity intake which adds into decrease renovation value for indoor monitoring. It has minimum radio interference which permits it to exist in concord with other radio indicators inclusive of those emitted by means of smart phones, Wi-Fi gadget and bluetooth gadgets. A high consumer density isn't a trouble to localization of specific assets because the person can differentiate one song asset and consider the data for it the usage of a visible dashboard. It is vulnerable to interference with the aid of steel and different materials, which makes it a suitable option for asset monitoring in production side.

Keywords: Sensor Network, Positioning Algorithms, Wireless Positioning Techniques, Object Tracking

Common Fixed Point Theorems in Partially Ordered Metric Spaces with Altering Distance Function

Rajesh Shrivastava¹, R. K. Dubey², Pankaj Tiwari³

¹Govt. Dr. S P M Sci. & Comm. College, Bhopal (M.P.), India.

²Govt. Model Science College, Rewa (M.P.), India.

³Govt. College, Lidhaura, Tikamgarh (M.P.), India

Email: rajeshraju0101@rediffmail.com, rkubey2004@yahoo.co.in, pankajvist@gmail.com

Abstract: The aim of this paper is to prove certain fixed point theorems for multi-valued and single-valued mappings in such spaces, by using altering distance function. Fixed point theory in partially ordered metric spaces has greatly developed in recent times. Our results improve and extend several recent results of fixed point theory.

Keywords: Common fixed points, Metric space, Partially Metric space, Altering distance function, Multi-valued and Single-valued mappings

Numerical solutions of Schrödinger equations with Harmonic Oscillator describing motion of Quantum Oscillator

Amit Goswami¹ and Preetam Singh Gour²

Jagan Nath University, Jaipur-303901, Rajasthan, India

Jaipur National University, Jaipur-302017, Rajasthan, India

Email: optoamit@gmail.com

Abstract: In this paper, an effective, powerful analytical scheme, popular as Homotopy perturbation sumudu transform method (HPSTM) is employed to attain approximate solutions of nonlinear time fractional Schrödinger equations with Harmonic Oscillator. These nonlinear time fractional Schrödinger equations occurs in the many fields of physics and technology such as quantum mechanics, optics, fluid dynamics, nonlinear physics, nanotechnology and in many more. The nonlinear time fractional Schrödinger equations with Harmonic Oscillator describe the various phenomena such as motion of quantum oscillator, lattice vibration, propagation of electro-magnetic waves, fluid flow etc. The main objective is to apply an alternative method of solution, which do not require small parameters and avoid linearization and physically unrealistic assumptions. The results show that HPSTM is very efficient and convenient and can be applied to a large class of problems. This study shows that the approximate results obtained by the HPSTM are very accurate and effective for analysis the nonlinear behaviour of systems. This study also states that HPSTM is much easier, more convenient and efficient than other available analytical methods.

Keywords: Quantum mechanics, Schrödinger equations, Harmonic Oscillator, Sumudu transform, Homotopy perturbation method, He's polynomials.

Binary Topological Space

Nazir Ahmad Ahengar¹, Roshani Sharma², J.K. Maitra³ and Sujeet Chaturvedi⁴

R.D.V.V Jabalpur 482001 (M.P) India

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: nzhmd97@gmail.com, roshanisharma@gmail.com, jkmrdvv@rediffmail.com

Abstract: Topology is playing a key role in almost every field of applied sciences and several branches of mathematics. This is very useful concept especially in information system, particle physics, quantum physics, high energy physics etc. In 2002 Csaszar [4] introduced and studied the concept of generalized topology and generalized continuity. In 2011 Nithyanantha Jothi S and Thangavelu P, [18] have introduced the concept of binary topology between two sets and studied different properties. In this paper we introduce and studied μ -binary topological spaces and investigate its basic properties

Keywords: Binary topological spaces, binary topological spaces, closure interior

Mathematical Concept of Compound Redundant system with availability and reliability parameter under supplementary variable method

Sonendra Kumar Gupta

Oriental College of Technology, Bhopal, India

Email: sonendrag@gmail.com

Abstract: In this paper author has assume that a compound system have 2-subsystems selected as " and " connected in chain. Subsystem " consists of Nunlike units in chain and the subsystem " consists of 3- like components in parallel redundancy. In this system it is assume that the system goes to complete crash state if any unit of subsystem " fails or more than 1-unit of subsystem " is in the failed state. Also, the system works with degraded efficiency if 1-unit of subsystem " failed. The system may also fail due to environmental reasons.

Keywords: Availability, Reliability, Abel lemma, MTTR, Ergodic behaviour and Laplace Transform and Supplementary variable

A Basic generalized properties of Transprocal Matrix and Transprocose Matrix.

Ram Milan Singh¹ and Manoj Ughade²

Govt. P.G. College Tikamgarh (M.P) India

J H Govt. P. G. College Betul (M.P) India

Email: rammilansinghlig@gmail.com, manojhelpyou@gmail.com

Abstract: In this paper we have to generalize some definition and properties of I-matrix, J-matrix Transprocal of certain matrix, transpose of transprocal matrix, can be represented by this matrix. On the other hand, the abstract treatment of linear algebra presented later will generalize a new sight into the structure of these matrices.

Machine Learning Algorithms in WSNs: A Review Article

Pooja Lalwani¹ and Vasima Khan²

Sagar Institute of Research & Technology, Bhopal (M.P) India

Email: poo.lalwani06@gmail.com, aarish.azfar07@gmail.com

Abstract: Wireless sensor network (WSN) is a recent leading technology that is used in realistic applications due to its variable size, cost-effectiveness and type of deployment. Sensor nodes battery in WSN cannot be recharge and nodes also cannot be replaceable due to which nature of WSN changes dynamically. The traditional approaches in WSN cannot adopt the changes dynamically. To overcome the drawbacks of traditional approaches, machine learning (ML) techniques are adopted to react accordingly. In this article, survey based on ML techniques with WSNs application is presented which covers from 2002 to 2018. In addition, drawbacks and advantages of each and every technique have been discussed. Finally, some open issues in WSN is mentioned for the future research direction.

Iwalk- A Smart Blind Stick

Shiva Kuchya¹, Sneha Wadhvani² and Vishal Patel³

Sagar Institute of Research & Technology, Bhopal (M.P) India

Email: skuchya99@gmail.com

Abstract: Independence is the building methodology in achieving dreams , goals and objectives in life . Visually impaired persons find themselves challenging to go out independently . There are millions of visually impaired or blind people in this world who are always in need of helping hands . Blind stick is an innovative electronic stick . Blind people have big problem when they walk on the street or stairs using white cane , instead of this white cane the electronic walking stick will help them by providing more convenient means of life . The main aim of this paper is to contribute our knowledge and services to the people of blind disabled society .

Keywords:- ATmega 2560 , Ultrasonic sensors , Sim Gsm/Gprs , SD Card Module , LDR , Water sensor , Registers , LED's ,Battery(9V) , buzzers , speaker .

Analysis of Triaxility Stress and Damage in Hot Extrusion Process of AL2024 using Finite Element Method

Shailendra Dwivedi¹ and Neeraj Dubey²

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: shailendrakdwivedi@gmail.com, dubeyneeraj2576@gmail.com

Abstract: Hot Extrusion process is a manufacturing process in which block of metal is reduced in cross section by forcing it to flow through a die orifice under high pressure. In general, extrusion is used to produce cylindrical bars or hollow tubes, but shapes of irregular cross section may be produced from the more readily extrudable metals, like aluminum. Heavy forces required in extrusion, most metals are extruded hot under conditions where the deformation resistance of the metal is low. However, cold extrusion is possible for many metals and has become an important commercial process. The reaction of the extrusion billet with the container and die results in high compressive stresses which are effective in reducing the cracking of materials during primary breakdown from the ingot. In this research work numerical simulation of hot extrusion process has been considered and carried out the finite element analysis has been carried out. Focused on the stress and strain behavior, triaxility stress and on the bases of deformation aiming on the damage and its behavior, taguchi method has been used for the validation of the design of experiment. For FEA DEFORM 3D software has been applied and for modeling of parts AUTOCAD has been used.

Keywords: Hot Extrusion, FEA, triaxility Stress, Damage.

Finite Element Analysis of Hot Rolling for an Aluminium 2024 Plate

Shailendra Dwivedi¹ and Neeraj Dubey²

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: shailendrakdwivedi@gmail.com, dubeyneeraj2576@gmail.com

Abstract: Now a day numerical modelling an important tool in the manufacturing industry to analysis the all the parameters of machining and geometrical. The two dimensional rolling model is common in manufacturing industries. In the present research work is based on a two dimensional finite element model for hot rolling of aluminum (Al2024) plate has been used. This model is used to study the behavior of the material under different values of coefficient of friction, roller diameter and initial thickness of the plate for attaining a required dimensional thickness of the rolled plate. The effect of friction, initial thickness of plate and roller diameter on maximum stress, equivalent plastic strain and reaction force has been studied. The current work has been carried out using the Finite Element software ABAQUS 6.10

Keywords: Hot Rolling, FEA, Stress- Strain.

Class(es) of Estimators under Non-Response and Measurement Error in Surveys

Diwakar Shukla¹, Abha Tenguria², Sharad Pathak³ and Dinesh Kumar Moriya⁴

¹Dr. Hari Singh Gour University, Sagar (M.P.), India.

^{2,3,4} Govt. M.L.B. Girl's Auto. P.G. College, Bhopal (M.P.), India.

Email: abha.tenguria@gmail.com, sharadstatistics@gmail.com, dinesh.moriya@gmail.com

Abstract: While in sample surveys, it is expected to assume that respondents are obtainable to provide information correctly asked by interviewers. Unfortunately, in real circumstances it is rarely happens. Often respondents are not available; often do not understand to interviewer and often show unwillingness for correct answer. This causes a sample to be incomplete. According to theory of survey sampling, investigators are recommended to revisit those units found non-responded but even then the problem remains the same. Over the issues of personal respect and prestige bias, respondents often produce over or under estimated response instead of the true value. This causes appearance of measurement error in sample values. This paper presents method of mean estimation in the setup of non-response and measurement error together. It contains method to impute the values which are non-responded in sample containing measurement error on study variable. Expressions of optimized mean squared error are derived and theoretical results are supported by numerical illustration. This is an attempt for a most general approach for the problem of estimation in sample surveys.

Key words: Non-response, Measurement error, Bias, Mean squared error, Imputation, Auxiliary information.

Lie Algebra and q Special Functions of Mathematical Physics

Ritu Sharma¹ and Abha Tenguria²

Govt. Maharani Laxmi Bai Girl's P.G. (Autonomous) College, Bhopal (M.P.)

Email: ritusharma327@gmail.com

Abstract: In this paper we will present important interrelationships between the theory of Lie groups and algebras, and special functions. We will study two specific Pseudo groups, namely $SO_q(2)$ and $SU_q(2)$, and we prove that similar properties of Lie groups and study about the role of q special function in mathematical physics.

Banach (E,1) Summability of the Derived Fourier Series

Kalpna Saxena¹ and Manju Prabhakar²

Govt. M.V.M. Bhopal (M.P), India

Email: manjuprabhakar17@gmail.com

Abstract: The aim of our paper is to study the Banach (E,1) product summability of derived series of Fourier series by generalizing the result of Tripathy and Pandey [9]

Keywords: (E,1) summability; Banach_(E,1) summability; Banach summability.

Mathematics Subject Classification (2010): 42A24, 42A20 and 42B08

Common Fixed Point Results for F-contraction in Complete b - Metric Spaces

Abha Tenguria¹ and Sarika Saxena²

Govt. M. L. B. Girls P. G. College, Bhopal (M.P.) 462001 India

Barkatullah University Institute of Technology, Bhopal (M.P.) 462026 India

E mail: abha.tenguria@gmail.com, sarika.s2011@rediffmail.com

Abstract: In this paper, we consider two F- contractive self mappings on a complete b- metric spaces. Object of this paper is to establish a unique common fixed point theorem for F - contractions. The results extend and generalize some results in the literature.

Keywords : Complete b- metric space, common fixed points, F-contractions.

Some Fixed Point Theorems for Expansive Type Mappings in Dislocated Metric Space

Sarla Chouhan¹, Prabha Chouhan² and Neeraj Malviya³

¹Shri G. S Institute of Tecnology and Science Indore (M.P.) India

²Govt. College Baktaral (M.P.) India

³Govt. College Timarni Dist. Harda (M.P.) India

Email: chouhan.sarla@yahoo.com, prabhachouhan@yahoo.com, maths.neeraj@gmail.com

Abstract: The present paper extend and generalize fixed point theorems for expansive type mappings in Dislocated Metric Space.

Keyword: Dislocated Metric Space, Fixed Point Theorems,

Mathematics Subject Classification: 47H10,54H25

On Ricci Quarter Symmetric Metric Connection

Teerathram Raghuwanshi¹, Swati Jain², Anil Goyal³ and Manoj Pandey⁴

University Institute of Technology, RGPV Bhopal (M.P.) India

Email: teerathramsgs@gmail.com

Abstract: The object of the present paper is to study a type of Ricci quarter symmetric metric connection on a quasi-Einstein manifold and $N(k)$ -Quasi Einstein manifold. We have shown that curvature tensor of the connection satisfies Bianchi's first identity and also that the conformal curvature tensor is an invariant of such a transformation. Apart from this, we have studied some more curvature conditions.

A Taylor Series Method for the Solution of the Newman Boundary Value Problems for Partial Differential Equations

Chitra Singh

Rabindranath Tagore University Bhopal (M.P.)-India

Email: chitrasingh30@yahoo.in

Abstract: In this paper, a numerical method for solving the Neumann problems for partial differential equations with constant coefficients and analytic Neumann conditions in two and three independent variables is presented. The technique is based upon the Taylor series expansion. Properties and the operational matrices for partial derivatives for the Taylor series in two and three variables are first presented. These properties are then used to reduce the solution of partial differential equations in two and three independent variables to a system of algebraic equations. The procedure can be extended to linear partial differential equations with more independent variables. The Taylor series may not converge if the solution is not analytic in the whole domain, however, the present method can be applied to Neumann boundary-value problems for linear partial differential equations, when the solution is analytic in the interior of the domain and also on some open subsets for each distinct part of the boundary. The method is computationally very attractive and applications are demonstrated through illustrative examples.

DSSSWMS: An Improved Approach For The Decision Support System In Solid Waste Management System

Narendra Sharma¹, Ratnesh Litoriya², Harsh Pratap Singh³ and Deepika Sharma⁴

Mewar University Chittorgarh, India

Jaypee University Guna, (M.P) India

Shri Satya Sai University of Technology and Medical Sciences, Sehore (M.P.), India

Email: Narendra_sharma88@yahoo.com, litoriya.ratnesh@gmail.com, singhharshpratap@gmail.com, deepikasharma190687@gmail.com

Abstract: India is a developing country, all the developing countries facing a sustainable waste management problem for a long time. The quantity of MSW is growing very rapidly and governments are not capable of disposal 100% of solid waste as per compare to generation. Improper waste management affects the environment and human being direct. Peoples suffer from many types of diseases due to improper solid waste management. To deal with this problem the Indian government makes policies and updates them from time to time. Now this time we need new technology that can be work of an integrate form with waste management models and help to improve the efficiency of the municipal solid waste management process. Decision support systems model such types of tools that can be the help of organizations or decision-makers to take proper decisions for a particular problem. A decision support system is a fully computerized system that can be work with the help of data mining technology.

Mathematical Modeling of Indoor Air Pollutants: A Review

Sachin Kumar Khare¹, Ravindra Randa² and V N Bartaria³

^{1,3}Lakshmi Narain College of Technology, Bhopal (M.P)-India

²UIT RGPV, Bhopal (M.P) - India

Email: sachinkhare.2008@gmail.com

Abstract: With the global concern over the pollution, the indoor environment is also to be kept safe and within the prescribed air quality standards as most of the people spend their 80% of the time indoor whether it is at home, office or any other place. The pollutant concentration in indoor is more than in outdoor atmosphere and can affect negatively human health and productivity. Therefore, prediction of indoor pollutant concentration will help in making the necessary arrangements to improve indoor environment in order to keep the human health and productivity up to the desired levels. Several studies have been made over four decades in developing, testing, and evaluating the performance of mathematical models for predicting pollutant concentrations in the indoor atmosphere. These studies provide the data pertaining to risk assessment and enable the regulatory bodies to provide guidelines for the appropriate steps for a given level of smoking, Chemically Reactive Pollutants activity etc. This paper reviews the Balance-Based Model for Indoor Air Pollutant Concentration Modelling, Mathematical Modelling of Chemically Reactive Pollutants in Indoor Air and Mathematical Models for Predicting Indoor Air Quality from Smoking Activity.

Generalized Fractional Kinetic Equations involving Generalized Extended-- τ Hypergeometric Function

Jai Prakash Patel

Madhyanchal Professional University, Ratibad, Bhopal (M.P.), India.

Email: jpnt.84@gmail.com

Abstract: Recently, introduced an extension of generalized τ Hypergeometric function ${}_3\Gamma_2^T(2)(z)$ (R. K. Gupta et al. [5]), [6]. In the present paper, authors have established further generalization of fractional kinetic equations involving generalized extended τ -Hypergeometric functions. The solution of these generalized fractional kinetic equations were obtained in term of Mittag-Leer function using Laplace transform.

Keywords: Generalized extended incomplete Hypergeometric Function, Fractional kinetic equation, Laplace transforms, Mittag-Leer function, Fractional calculus.

Mathematics Subject Classification (2010): 26A33, 33B15, 33B20, 33C20, 44A10, 33E20.

Global Stability Analysis of SITRS Model of Influenza

Trupti Barve¹, Sandeep Kumar Tiwari² and Pradeep Porwal³

^{1,2,3}Vikram University, Ujjain (M.P.) India.

Email: truptibarce23@gmail.com, skt_tiwari75@yahoo.co.in pradeepratnawat@yahoo.com

Abstract: Numerous people all over the world are suffering from influenza every year. It is an acute respiratory infectious disease which is caused by influenza virus. The purpose of this paper is to study the spread of disease when individuals have tendency to become susceptible again after recovery. A SITRS deterministic model is proposed and analyzed. In this paper basic reproduction number R_0 is obtained, local stability of disease free equilibrium and endemic equilibrium is studied and discussed global stability of disease free equilibrium. It is observed that disease free equilibrium is locally and globally stable when $R_0 < 1$ and endemic equilibrium is stable when $R_0 > 1$. Numerical simulations are performed using MATLAB to check the effect of movement of individuals from recovery class to susceptible class and results are shown graphically.

Coupled fixed-point theorem using E.A property in complex valued rectangular (generalized) metric space.

Mona Verma

Govt. P.G College Narsingharh- Rajgarh (M.P.) India.

Email : monaverma117@gmail.com

Abstract: In this paper coupled fixed point is obtain for four mapping using E.A property in complex valued rectangular (generalized) metric space.

Keywords: Complex- valued metric space, coupled fixed point, E.A property.

Parametric excitation of high-frequency surface Plasma waves in Bismuth-Metal Interface

Ashim Prakash Jain and Sangeeta Kapoor.

Lakshmi Narain College of Technology & Science, Bhopal (M.P)-India

Email: ashimj@lnct.ac.in, kapoorsangeeta1972@gmail.com

Abstract: The problem concerning the excitation of high-frequency surface Plasma waves (SPW) propagating across an external magnetic field at a plasma-metal interface is considered. A homogeneous electric pump field is applied in the direction transverse with respect to the plasma-metal interface. Two high-frequencies SPW from different frequency ranges of existence and propagating in different directions are shown to be excited in this pump field. The instability threshold pump-field values and increments are obtained for different parameters of the considered waveguide structure. The results associated with saturation of the nonlinear instability due to self-interaction effects of the excited SPW are given as well. The results are appropriate for both gaseous and semiconductor plasmas. A surface plasma wave (SPW) over bismuth-Metal interface has a signature of mass anisotropy of free electrons. For SPW propagation along the trigonal axis there is no birefringence. The damping rate of waves at low temperatures is low. The surface plasma wave may be excited by an electron beam of current 100 mA propagating parallel to the interface in its close proximity.

Artificial Neural Network Modeling for Estimation of Carbon Monoxide Concentration

Sangeeta Kapoor¹, Sudhir Nigam², Rashmi Nigam³

Lakshmi Narain College of Technology & Science, Bhopal (M.P)-India

²Envirimental Consultant, (M.P)-India

³UIT, RGPV, (M.P)-India

Email: kapoorsangeeta1972@gmail.com

Abstract: The lack of environmental data is a common feature for many developing countries. Accurate estimation technique is highly required to overcome with this problem and the artificial neural network (ANN) is regarded as cost effective and better suited technique for estimation as compare traditional statistical techniques. In this paper an attempt is made to estimate concentration of CO gas based on historical data using artificial neural network (ANN). Eleven years (1996-2006), night time (22.00-06.00 Hrs.) CO emission data from ITO square of Delhi has been employed for modelling and simulation study. The results of ANN studies predicted CO concentrations with great accuracy and closer-to-reality which can be helpful to alleviate the excessive CO accumulations.

Keywords: Concentration, Artificial Neural Network (ANN), Real time analysis, Modelling.

Intelligent Phishing Detection Classification Using Hybrid Approach

Shivani Goutam¹, Rajeev Kumar² and Vivek Kumar³

Lakshmi Narain College of Technology & Science, Bhopal (M.P)-India

Email: rajeevcsemitb@gmail.com, vivekk@lnct.ac.in

Abstract: The so-called phishing attacks refers to an attacks in which a legitimate website is mimicked, in order to steal sensitive statistics from end-users. Phishing attacks are one of the significant threats to individuals and corporations on the Internet today. In recent years, this problem has been actively researched by academia and industry. There are two main approaches to try to provide an effective phishing solution: The first is to identify phishing attacks by comparing the similarities between phishing and the target site. The second method is to observe the underlying characteristics of the attack. This paper proposes a phishing technique based on web page uniform resource locator (URL) authentication. The proposed solution is able to distinguish legitimate web pages from fake web pages by verifying the Uniform Resource Locator (URL) of the suspicious web page. Check URLs against specific features to verify phishing pages. Prevention of detected attacks is reported. The performance of the proposed solution was evaluated using the Phistank and Yahoo Directory datasets. The obtained results suggest that the detection mechanism is deployed and can detect various types of phishing attacks while maintaining a low rate of false alarms.

Keywords: Phishing, malicious URL, KNN, machine learning, cybersecurity.

Review on mathematical modelling of an Internal Combustion Engine

Rajeev Singh Chauhan¹, Nitin Shrivastava² and Arun Kumar Wamankar³

²UIT-RGPV Bhopal (M.P) India

^{1,3}Lakshmi Narain College of Technology, Bhopal (M.P) - India

Email: rajen5432@gmail.com

Abstract: In this article, we are focussed and discussed on different types of mathematical modelling and its application used in internal combustion engine. A mathematical model usually describes a system by a set of variables and a set of equations that establish relationships between the variables such as combustion, performance and emission parameters. By the use of mathematical modelling different parameter of internal combustion engine can be correlate and analyse the effect of one parameter to another. After developing a mathematical model different types of fuel blend can be easily analyse the effect on combust, performance and emission at different loads within the experimental domain. Author's analysed and found from previous published paper related to mathematical modeling and experimental output predicted should be closer to developed mathematical model.

Kinetic Model for Performance Prediction of Anaerobic Digester

Arvind Kumar Mishra¹, Prashant Baredar², Anjaney Pandey³, Deepak Kumar Rathaur⁴,
and Prashant Pandey⁵

^{1,4,5} Lakshmi Narain College of Technology & Science, Bhopal (M.P)-India

²Department of Energy, MANIT Bhopal (M.P.)

³IPST Rural Engg. , MGCGV, Chitrakoot (M.P.)

Email: arvind686465@gmail.com

Abstract: Anaerobic Digestion (AD) is a biological process that happens naturally when bacteria breaks down organic matter in environments in the absence of oxygen. Anaerobic digestion (AD) is a microbial decomposition of organic matter into methane, carbon dioxide, inorganic nutrients and compost in oxygen depleted environment and presence of the hydrogen gas. Bacterial growth is a complex process involving numerous anabolic (synthesis of cell constituents and metabolites) and catabolic (breakdown of cell constituents and metabolites) reactions. Ultimately, these biosynthetic reactions result in cell division. Several distinct growth phases can be observed within a growth curve lag phase, the exponential or log phase, the stationary phase, the death phase. During exponential growth the rate of increase of cells in the culture is proportional to the number of cells present at any particular time. One can mathematically describes cell growth during the exponential phase. Equation has been developed from a series of experiments performed. The results of these experiments shows that at low substrate concentrations, growth rate becomes a function of the substrate concentration. Thus, designed Equation to describe the relationship between the specific growth rate and the substrate concentration. The most important determinants of good living conditions for anaerobic bacteria and therefore efficient gas production. Acetogenic (acid forming bacteria) and methanogenic are naturally present in cow dung. However, their number is quite small. Acid forming bacteria proliferate fast and increase their number, while methanogenic bacteria develop very slowly. Therefore, for the initial reaction, small amount of sludge of another digester is generally used as seeding or inoculum. This sludge contains high concentration of acetogenic and methanogenic bacteria which could enhance the process of anaerobic digestion of organic materials. Some study has shown that the seeding materials can be mixed with the input slurry up to the ratio of 30 to 50 percent. If inoculum is increased further, less volume of gas is obtained due to reduced inputs fed to the digester. Anaerobic digestion occurs best within a pH range of 6.8 to 8.0.

Emotion Detection based on Images and Captions on Social Media

Aditya Patel¹, Hitesh Gupta² and Utkarsh Dwivedi³

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: adityapatelmail@gmail.com, hitesh034@gmail.com, utkarshdwivedibtech@gmail.com

Abstract: Nowadays, Internet has grow to be an crucial element in every person's lifestyles. Social networking has regularly grow to be a recurring for people to submit their photos, opinions and remarks. People percentage their emotions on line in a completely casual language. Thus, it is very tough mission to research actual sentiment hidden inside the text of natural language. Emotion detection is the sphere of study that analyses people views and feelings. Human emotion can be expressed through numerous approach which include speech, facial expressions, gestures and textual facts. This paper proposes the gadget which makes use of present emotion detection thru facial features using deep mastering and supports it with the evaluation of textual information received thru captions of pics on social networking websites to ensure greater accurate outcomes. There is no characteristic on social networking sites to kind feelings of photos which motivate us to classes posts based on emotions. Emotion detection from each captions and photos collectively is efficient due to the fact most effective text isn't always enough to apprehend the feelings of customers. This hybrid approach offers promising results in both the class of feelings as well as in acting emotion detection.

Keywords: Emotion detection, Convolution Neural Networks, Social Networks, Deep Learning, Sentiment Analysis

Content Based Facial Emotion Recognition Model using Machine Learning Algorithm

Aditya Patel¹, Vijay Kumar Trivedi² and Utkarsh Dwivedi³

Lakshmi Narain College of Technology, Bhopal (M.P) - India

Email: adityapatelmail@gmail.com, hitesh034@gmail.com, utkarshdwivedibtech@gmail.com

Abstract: Emotion reputation or sentiment analysis is recognized as a critical studies topic in pc vision community. The challenges include identity of face, popularity of accurate emotion, suitable database and so forth. We have proposed and implemented a fashionable Convolution Neural community (CNN) building framework for emotion popularity. The model is formalized by means of developing a coincident gadget which fulfills the duties of face detection and emotion classification the usage of our proposed CNN structure. The version is verified using the FER-2013 dataset. In the proposed paintings, we talk the applicability of the proposed CNN model. This model lays a valuable evaluation of the effect of changing the network size, pooling, and dropout. For a given model, the very last accuracy at the validation facts is round 63%.

Keywords: Convolutional neural network (CNN), Facial expression recognition, Deep neural networks.

Role of SODAR in the Climate Observing and Predicting System

Anjali S. Nair¹, Priyanka Singh², Mamta Devi³, Kirti Soni⁴,

Mahavir Singh⁵ and Sangeet Kapoor⁶

¹Physico-Mechanical Metrology (PMM) Division,

CSIR-National Physical Laboratory, New Delhi, India,

²Lakshmi Narain College of Technology & Science, Bhopal (M.P) - India

Email: soniks@nplindia.org

Abstract: Climate Change is our time's defining problem and we are at a defining moment. The effects of climate change are global in scope and unprecedented in scale, from changing weather patterns that threaten the human life and livelihood due to the rising risk of hydro meteorological disasters like flood, hurricanes, cyclones, drought etc. Without dramatic intervention today, it will be harder and more expensive to adapt to these hydro-meteorological effects in the future. Many methods have been created and are being developed for curbing the catastrophic effect caused due to hydro-meteorological disasters. Remote sensing was one of those techniques that had a huge effect on disaster management. This technology has been widely used in recent decades to explain the extent of the impacts of earthquakes, tsunamis, hurricanes, floods, wildfires etc. Remote sensing techniques have proved important effectiveness in quantifying post-disaster harm after major disaster through high resolution optical imaging and active sensors. Before these disasters happen and create a dreadful situation (humanly in terms of economy and socially), however, it is necessary to estimate and predict them. The present study focused to develop environmental models that enable prior prediction of these disasters via estimation of extreme climate change before it could cause detrimental effects. The research deploys Sound Detection and Ranging (SODAR) for collection of data in relation to wind speed and direction, atmospheric boundary layer for specific locations in India that are hit by hydro-meteorological catastrophe for evaluating the role of SODAR and environmental modelling in prediction of climatic trends, thereby avoiding the disaster hit consequences. The study also addresses the wider applications and advantages of using SODAR than other remote sensors and the models which uses wind speed and direction for the prediction of climate changes and thus helping in pre preparedness before the disaster. Therefore, there is an apparent connection between climate change and rising climate-related risks, generally suggesting the need to assert about the need for its predication through environmental modelling. This project will take the help of environmental modelling to ascertain about the upcoming climate change which will enable an estimation of climatic havoc leading to pre-precautionary measures before these disasters affect the people.

Security Concerns, Matters and Methods for Wireless Sensor Network

Leena Jadhav¹ and Jitendra Sheetlani²

¹SSSUTMS, Sehore (M.P)- India

E mail: leenavishal83@gmail.com

Abstract: A Mobile ad hoc networks (MANETs), a class of flexible and self-autonomous wireless networks that can be rapidly deployed and reconfigured without infrastructure support or centralized management, are highly promising to provide communication support [1]. The mobile nodes can move from one location to another. The mobile nodes are formed as a network without help of central management [1, 2, 18]. The Nodes in networks make use of an equivalent random access channel, cooperating in an especially friendly manner to contributing themselves in multihop forwarding. With the worldwide use of wireless sensor networks in different field and for various applications such as health care, military, ecological, and earth sensing, surveillance system monitoring. By reason the restrictions/ limitations of sensor nodes in terms of energy, storage and computational capacity, the use of insecure wireless communication channels concerns have ascended in these applications. To countermeasure the limitation various techniques and algorithm has been developed by the researchers. In this paper, we present the security issues, challenges occur and different techniques to overcome these security issues with their merits and demerits.

Keywords: Wireless sensor network, Sensor node, Security, Health care, Energy

Mathematical Modeling of Heat Exchange in the Under Ground Pipe of an Earth Air Heat Exchanger System

K. V. Rao¹, V. N. Bartaria² and Prashant Bhawe³

¹Research Scholar, LNCT University, Bhopal (M.P)-India

²Professor, Mechanical Engineering, LNCT, Bhopal (M.P)-India

³Environmental Engg, VJTI, Mumbai-India

Abstract: The tropical countries like India where heating and cooling of air is mostly required during particular season in a year. Conventional heating and cooling systems consume a great amount of energy reaching up to the level of almost one-third of the total energy consumption. As the current energy requirements are mostly fulfilled by the fossil fuel based energy generation systems, this extensive consumption of the energy contributes to green house emissions and affecting the environment adversely. A promising technology of heating and cooling of air by the earth air heat exchanger system has been becoming important in the present scenario of emphasis on reducing energy demand on space heating and cooling. This renewable and passive system of heating and cooling reduces the energy demand and thus protect the environment also. The design of the earth air heat exchanger system involves various parameters such as the thermo-physical properties of the soil, thermal and flow characteristics of the air in the pipe, material, orientation and dimensions of pipes buried in the earth and the heat exchange for the optimum performance. This paper presents the mathematical modeling of the heat exchange in the underground pipe. The mathematical model will provide the necessary input data for the design of an efficient earth air heat exchanger system. Thus the space heating and cooling can be more effectively done with the saving of energy and protecting the environment.

Extreme Values Analysis for Finding Outliers Detection Using Machine Learning to Detect Predicted Data Points

Atul Kumar Gupta, Ashish Jain, Nikesh Tiwari

Jagran Lakecity University Bhopal (M.P)-India

Lakshmi Narain College of Technology, Bhopal (M.P)-India

Email: atul.gupta@jlu.edu.in, jainashish1302@gmail.com, nikeshtiwari786@gmail.com

Abstract: An outlier is usually measured as an observation which is extensively found distant from the other well thought-out observations. In the era of modern machine learning analysis of n-dimensional datasets, data quality is essential for economists to guarantee robust results. Many machine learning algorithms are sensitive to the range and distribution of attribute values in the input data. Outliers in input data can skew and mislead the training process of machine learning algorithms resulting in longer training times, less accurate models and ultimately poorer results. Even before predictive models are prepared on training data, outliers can result in misleading representations and in turn misleading interpretations of collected data. Traditional techniques for outlier detection tend to exclude the tails of distributions and ignore the data generation processes of specific datasets. Various methods for detecting different kinds of outliers in high-dimensional data sets from two different perspectives, i.e. detecting the outlying aspects of a data object and detecting outlying data objects of a data set. N-dimensional data can be seen as part of the variety challenge of machine learning.

Keywords: Outlier detection, Machine Learning, High-Dimensional Data, Intrinsic Dimension (ID), k-Nearest Neighbour (k-NN)

Review of Artificial Neural Network and Its Applications

Nikita Naik¹ and Jagruti Sohale²

¹Seva Sadan Mahavidhyala, Burhanpur (M.P)- India

Email: jagrutisohale99@gmail.com

Abstract: In this paper, we are elaborating Artificial Neural Network or ANN, its areas of applications. An Artificial Neural Network (ANN) is an information processing paradigm that is inspired by the way biological nervous systems, such as the brain, process information. In our brain, there are billions of cells called neurons, which processes information in the form of electric signals. ANN works on this concept. ANN provides a very exciting alternatives and other application which can play important role in today's computer science field. This paper gives overview of Artificial Neural Network of ANN. It also explains the application and advantages of ANN.

Keywords : Artificial neural network, information, process, electric signal, biological nervous system.

Role of AI in Designing Smart Homes

Ashi Jain¹ and Bhumika Lalchandani²

Lakshmi Narain College of Technology & Science, Bhopal (M.P) - India

Email: ashijain586@gmail.com, bhumikalalchandani321@gmail.com

Abstract: Smart Homes have become firmly established as an active research area with potential for huge social and economic benefits. The concept of a Smart Home refers to the enrichment of a living environment with technology in order to offer improved habitual support to its inhabitants and therefore an improved quality of life for them. In this research paper we purpose how advances from the device and technological side have not necessarily been matched with a similar level of development in processing of the information recorded within the living environment from an algorithmic or 'intelligent' perspective. We surmise how traditional areas in Artificial Intelligence can bridge this gap and improve the experience for the user within a Smart Home. Smart Homes offer many benefits to its inhabitants and people with special needs. ANN (Artificial neural Network) technology appear to have potential, especially in the automated monitoring and control of smart home devices and the relevant space as well as the well being of inhabitants. With the rapid advances in technology , especially in wireless sensors and sensor networks, it is expected that it is not far when many of the dreams of the smart homes will be realized.

Application of Intuitionistic Fuzzy Soft Matrix Theory in Decision Making in Real Life Problem

Manoj Sharma¹, and Dharendra Kumar Shukla²

Sagar Institute of Research & Technology, Bhopal (M.P)-India

RIE, Bhopal (M.P)-India

Email: sirtmns@gmail.com

Abstract: Soft set theory is a newly mathematical tool to deal with uncertain problems. It has a rich potential for application in solving practical problems in economics, social science, medical science etc. The concept of fuzzy soft sets extended fuzzy soft set to Intuitionistic fuzzy soft sets .In this paper we proposed intuitionistic fuzzy soft matrices and defined different types of intuitionistic fuzzy soft matrices and some operators. Finally a practical example that explains the best solution is analysed and demonstrate the application of the proposed decision making method.

Keywords: Soft sets, Fuzzy soft matrix (FSM), Fuzzy soft set (FSS), Intuitionistic fuzzy soft matrix (IFSM), Addition of IFSM, Complement of IFSM , Subtraction of intuitionistic fuzzy soft matrix.

Generalized the Result on Common Fixed Point Theorem in Complex Valued b- Metric Space

Pradeep Kumar Dwivedi

Sagar Institute of Research Technology and Science, Bhopal (M.P.)

Email : pkdwivedi76@gmail.com

Abstract: In this paper we generalized a common fixed point theorem for four self-mappings satisfying rational contraction has been proved in complex valued b-metric space. Then, examples are provided to verify the effectiveness and usability of our main results. Finally, we validate our results by proving both the existence and the uniqueness of a common solution of the system of Urysohn integral equations and the existence of a unique solution for linear equations system.

Keywords: complex valued b-metric space, common fixed point, compatible mapping, weakly compatible mapping, integral equations, linear system.

AMS Subject Classification No. (2010): 47H10; 54H25

Big Data Analytics and High Performance Computing: Issues, Challenges and Paradigms

Swati Namdev and Sunil Phulre

LNCT University, Bhopal (M.P.) - India

Email : swati.tailor@gmail.com, suneel.lnct@gmail.com

Abstract: Data has grown with the advent of technology, capture and store data and then analyze it. Big data is a primary concern with the management of computational models that require improvement. Big data and then later the rise of big data analytics which changed the whole perspective of data and data handling. Satisfied growing analytical needs for Big Data with extremely high performance computing models. As a result, a lot of research in this area has been seen in recent years, several paradigms for Big Data Analytics emerge. Simultaneously, the spread of Big Data Analytics in various domains, concerns about the effectiveness of the new analytical paradigm are also being seen. This paper highlights the major analytical models and concerns and challenges in High Performances Computing.

Keywords: Big Data, High performance computing, Computational Model

Assortment of Data on Life table with Role of control of Internal Parasite in calf

Shoyeb Ali Sayyed

Lakshmi Narain College of Technology, Indore (M.P.) - India

Email: shoyeb9291@gmail.com

Abstract: The assortment of information on life-table at various stages gives a significant undertaking for control of Internal Parasite in calf at various ecological conditions. Accordingly, in present examinations, age and stage explicit life table of were utilized at different stages.

Keywords: Life table, age explicit life and stage explicit life.

Review Analysis of IOT based Solar Energy System

Anand Singh¹ and Manish Khemariya²

Email: manishk@lnct.ac.in, anand24883singh@gmail.com

Abstract: A smart solar photovoltaic system is an advent of innovation coherence of information and communications knowledge with power systems control engineering via the internet. This paper designs and demonstrates a smart solar photovoltaic off grid system that self-healing, ecological and consumer friendly, but also with the ability to put up other renewable sources of energy generation seamlessly, creating healthy spirited energy industry and optimizing energy assets efficiency. This work also discuss the modeling of an competent dynamic smart solar photovoltaic power system by exploring the most power point tracking efficiency, optimization of the smart solar photovoltaic array through modeling and simulation to get better the quality of design for the solar photovoltaic module. Using the Internet of Things Technology for supervise solar photovoltaic power generation can greatly enhance the performance, monitoring and maintenance of the plant. The discussion in this project work is based on implementation of new cost effective methodology based on IOT to remotely monitor a solar photovoltaic plant for performance evaluation. This will facilitate preventive upholding, fault uncovering, historical study of the plant in totaling to real time monitoring.

Keyword: Solar, IOT, Power System, Optimization

Glaucoma diagnosis using discrete wavelet transforms and Histogram features from fundus images

Nandini Kokate¹, K.G. Kirar² and M.L. Jatav³

SATI, Vidisha (MP) India

Lakshmi Narain College of Technology & Science, Bhopal (M.P) - India

Email: kokate@gmail.com

Abstract: Glaucoma is one of the main eye diseases; it causes progressive deterioration of optic nerve fibres due to increased fluid pressure. The existing methods of glaucoma diagnosis are time consuming, expensive and require practiced clinicians to understand the eye problems. Hence fast, cheap and more accurate glaucoma diagnosis methods are needed. This paper presents an innovative idea for diagnosis of glaucoma using third level two dimensional discrete wavelet transform (2D DWT) and histogram features from fundus images. The 2D DWT is used to decompose the glaucoma and healthy images and histogram features are extracted from 2D DWT decomposed sub band images. The least square support vector machine (LS-SVM) is used as a classifier which classifies the glaucoma and healthy images using the extracted features.

Keywords: Glaucoma; 2DWT; LS-SVM.

Some fixed point theorems for generalized Kannan type mappings in b-metric spaces

Motiram Likhitkar¹, R. D. Daheriya², and Manoj Ughade¹

^{1,2,3}Government J.H. Post Graduate College, Betul (M.P) - India

Email: jagdish_pet@yahoo.co.in

Abstract: In this paper, we prove some fixed point theorems in b-metric spaces using subadditive altering distance function. Some of these results generalize many existing fixed point theorems for Kannan type mappings. The results are justified with suitable examples.

Strong convergence of a general algorithm for nonexpansive mappings in Banach spaces

R. D. Daheriya¹, Umesh Dongre² and Manoj Ughade³

¹Government J.H. Post Graduate College, Betul, India

²Dr. B. R. A. Government College, Amla, India

Email: udhelpyou@gmail.com

Abstract: In this work, we consider a general algorithm for a countable family of non expansive mappings in Banach spaces. We proved that the proposed algorithm converges strongly to a common fixed point of a countable family of non expansive mappings which solves uniquely the corresponding variational inequality. It is worth pointing out that our proofs contain some new techniques. Our results improve and extend the corresponding ones announced by many others.

Speech Recognition Application without Internet Connection

Aakarsh Singh Bais¹, Meetoo Singh² Shreya Singh³

Lakshmi Narain College of Technology, Bhopal (M.P.) - India

Email: singhshreya2511@gmail.com, meetoos@lnct.ac.in

Abstract: Artificial Intelligence, in all its forms is trying to make life simpler for humans, by utilizing the thinking power of man in creating machines which can think and do work for man. It is an area of computer science which focuses on developing intelligent, decision making machines which work and react like humans. There are millions of applications of Artificial Intelligence, one of them being: Speech Recognition. It is an area which enables translation of man-spoken words into machine readable format. Consequently, the machine understands the language, processes the words and responds depending upon the decision made by it. In this digital era, everyone knows how to use Google Assistant. Siri and Cortana have made everything easy for us. But still, these speech recognition softwares cannot work without proper internet connectivity. The research paper is entitled to demonstrate a solution to make use of artificial intelligence without internet. The main idea is to use integrated circuits as a medium to store the data required for processing of decisions. Also, computer's cache can be used to store frequently asked questions so as to deliver the solutions at a faster rate. This would make use of artificial intelligence in setting up of smart alarm clocks, in handling of event management, redirect users while travelling through frequent routes without using GPS system. This strategy would help make the speech recognition software a standalone application, and would provide reliability and faster response time as well.

Keywords: Artificial Intelligence, Speech Recognition, Response Time, Reliability

AI based chatbot with the help of Image processing for Medical Assistance

Anmol Saxena¹, Ajeyata Verma² and Anukul Kumar³

Lakshmi Narain College of Technology & Science, Bhopal (M.P.) - India

Email: vermajeyata05@gmail.com

Abstract: The aim of this paper is to present the idea of a chatbot which would give medical assistance to the patient at their home. It would also make use of image sensing to process image given by user and detect the disease. It would also be having a feature for emergency service. The chatbot would be user friendly and would communicate with user in natural language. The chatbot will be providing immediate home remedies which the patient could use at home to get quick and effective results.

Keywords: Chatbot, Artificial Intelligence, Image Processing, Dialog Flow

A.I based Chat Bots for Providing Health Related Information

Deepanshu Singh¹, Aashutosh Gujrati² and Arundhati Dube³

Lakshmi Narain College of Technology & Science, Bhopal (M.P.)-India

Email: thakurdeep077@gmail.com, aashutoshgujrati09@gmail.com

arundhati.dube617@gmail.com

Abstract: Chat bots in health care have the potential to provide patients with access to immediate medical information. Health Care chat bots could help patients better manage their own health, improve access and timelines to care. This can be done by using a conversational chatbot which will ask for various symptoms of a disease and will try to find out the type of disease along with it's home remedy using machine learning. It will also provide the details of the nearest hospital in case of an emergency.

Keywords: Chatbots, Machine learning, Dialogflow, Human-computer interaction.

A Novel Technique to Early Detection and Avoidance of Congestion in MANET

Bhawana Pillai¹, Deepak Singh Tomar² and Ashish Khare³

Lakshmi Narain College of Technology & Science, Bhopal (M.P.) - India

Email: bhawanapillai@gmail.com, tomar_deepak01@yahoo.in, prof.khare@gmail.com

Abstract: MANETs have different features that make congestion management more difficult. This paper examines a similar approach to congestion solving situations and minimizing loss of packets in wireless networks. The method of using the concept of trust aware with Queue status for bandwidth aware routing is introduced. We used NS2 simulator and we have demonstrated our approach improves system performance and reduces the number of packets deposited on the network, so improving system performance.

Keywords: MANET's, Congestion control, Packet loss, Congestion controlling techniques.

A Security Issues and Approaches in Cloud Computing

Virendra Kumar Tiwari¹, Vishwa Gupta² and Pankaj Deoskar³

Lakshmi Narain College of Technology- MCA, Bhopal (M.P) - India

Email: virugama@gmail.com, vishwa.gupta80@gmail.com, pankaj_78600@yahoo.com

Abstract: This paper discusses the data security in computing of cloud and also focuses on the study of information in the cloud and all aspects that are related to concerning security. It also discusses the probable fear of data security in the cloud environment and their solutions adopted by an assortment of service providers to defend security of data. Research paper will depart in to details of defense for data rules with approaches used to ensure maximum fortification of data by decreasing risks as well as threats. Data availability in the cloud is advantageous for numerous applications. For the more perspective, research focus on confidentiality of data perpetuation which becomes more complex with flexible data sharing among a vibrant user group. It requires the concealment of outsourced data and a competent sharing of decryption keys between different certified users. For this reason a variety of methods are offered some of them focus on the use of attribute based cryptography ABC with AES.

Keywords: Data Security, Cryptography, Public key, Data Protection, Privacy, Risks and threats

Common Fixed Point Theorem for Multivalued Generalized Fuzzy Mapping in b-metric space

Umashankar Singh¹ and Naval Singh²

¹Sagar Institute of Research & Technology Excellence, Bhopal, India

²Govt. Science and Commerce PG College Benazeer, Bhopal, India

Email: umashankar_singh1977@rediffmail

Abstract: In this paper, we are proving α -fuzzy fixed point and common α -fuzzy fixed point theorems for Multi-valued fuzzy mapping in complete b-metric space. Our result extends and generalizes the result of A. Shahzad with new rational expression.

Keywords: Multi-valued Mapping, b-metric space, fixed point, Common fixed point.

Optimal solution method for Transportation problems of multiple variables

Aarti Borasi¹ and Brajendra Tiwari²

Govt. J.N.S., P.G, College, Shujalpur (M.P)- India

RKDF University, Bhopal (M.P)-India

Email: aarti237@gmail.com

Abstract: Transportation problem is considered a vitally important aspect that has been studied in a wide range of operation including research domain. As such it has been used in simulation of several real life problems. The transportation problem is a special class of model. It deals with the situation in which a commodity from several sources is shipped to different destinations with the main objective to minimize the total shipping cost .optimizing transportation problem of variable has remarkably been significant to various disciplines .It this paper , multiple variable will be optimized to reduce from-transportation cost using multiple method which will include. Northwest corners method, least cost method, Vogel method and mode method. This will mainly aim at finding the best and cheapest route on how supply will be used to satisfy demand at specific points,

Keyword: Optimization techniques, transportation problem, northwest corner, least cost, Vogel, model.

Reliability of System with Two Repair Facilities

Anil Singh and Sanjay Chaudhary

Institute of Basic Science, Dr. Bhimrao Ambedkar University, Agra (U.P.)- India

Email: anil291singh@gmail.com

Abstract: The aim of this paper is to present a reliability analysis of two unit cold standby system with repair facilities. The system consists of two units with each one with operable or failed state. At any time, one unit is operating while other is in cold standby. The failure has been divided into two parts major and minor. Minor failure requires minor repair facility and major repair requires major repair facility. Thus there are two repair facilities available. System has perfect switching for units .The system completely fails on the failure of both the units. The failure and repair times follow exponential and general time distribution. Partial Differential Equations and Laplace Transforms of various state probabilities have been obtained. Reliability of the system has been derived in the form state probabilities.

Keywords: cold standby system, major and minor repair facilities.

Modelling of the Risk of Cancellation of Policies using Fuzzy Logic Approach

Gaurav Sharma¹ and Sanjeev Kumar

Institute of Basic Science, Dr. Bhimrao Ambedkar University, Agra (U.P.)- India

Email: garv13sharma@gmail.com, sanjeevibs@yahoo.co.in

Abstract: The preventive avoidance of cancellation is a key problem facing insurance companies. A conversation with the client held prior to latter's decision to cancel a contract increases the likelihood of contract continuity. So companies are in need of reliable expert system that can help them to evaluate the risk of cancellation of the policies in future. With the help of fuzzy system it is possible to identify clients who may potentially cancel and take timely measure to safeguard the portfolio. Here a model is presented, which is designed by using fuzzy mathematics and expert system to provide indicative results on the risk of cancellation of the policies in future.

Keywords: Fuzzy logic, Insurance, Risk classification, Inference system, MATLAB, Index of vagueness.

Availability Evaluation of 1-Unit System with 2-Warm Standbys

Kanta and Sanjay Chaudhary

Institute of Basic Science, Dr. Bhimrao Ambedkar University, Agra (U.P.)- India

Email: singhkanta80@gmail.com

Abstract: This paper extracts the availability of a warm standby system with reboot delay and switching failures. The system is studied under the assumption that the time-to-failure and the time to repair of the primary and standby units are exponentially and generally distributed, respectively. There is a possibility of failures during the switching from standby state to primary state. Reboot delay happens in this switching procedure of a standby unit to primary unit. The reboot time is assumed to be exponentially distributed. It is assumed that there is a significant probability of a switching failure. Primary and warm standby units can be considered to be repairable. Using the supplementary variable technique we develop the explicit expressions for the steady state availability.

Investigation about Stock Market Timing using Fuzzy Inference System

Manisha Dubey and SanjeevKumar

Institute of Basic Science, Dr. Bhimrao Ambedkar University, Agra (U.P.)- India

Email: mdmanidubey@gmail.com

Abstract: To determine the buy and sell time is one of the most important issue for investors in the stock market. Stock investment has become an important investment activity and internet makes it easier exchange stock information and to make stock transaction. Trading in the stock market is full of uncertainly so there is vagueness in the market. Predicting the market is very difficult since it depends on several unknown factors. A person cannot observe that what is going to be happening and therefore investors often lose their money due to unclear investment objective. In this work a fuzzy approach to stock market timing is investigated. The proposed fuzzy model helps in identifying the stock market which is very bullish, bullish, neutral or very bearish, bearish. The four input factor are fuzzified to get a output using fuzzy logic, the stock market which is either very bullish, bullish, very bearish, bearish or neutral continues to some extent. For fuzzifying these input data, trapezoidal membership function is used, and center of gravity method is used for defuzzification of fuzzy output. The results found suggest that fuzzy modeling for this purpose is very promising.

Keywords: Stock market, fuzzy logic, timing, trapezoidal membership function.

Fuzzy Logic Concatenation in Biometric Identification Systems

Monika Rathore and Sanjeev Kumar

Institute of Basic Science, Dr. Bhimrao Ambedkar University, Agra (U.P.)- India

Email: monikarathore16sep@gmail.com

Abstract: Security of information is one of the most important factors of information technology and communication. So systems need strong procedures to protect data and resources access from unauthorized users. There are number of ways to prove authentication and authorization. But the biometric authentication beat all other techniques. Biometric-based authentication systems represent a valid alternative to conventional approaches. As Multimodal biometric identification system is more powerful, more accurate, less noisy data than the Single/Unimodel biometric system. This paper introduce three biometric techniques which are face recognition, fingerprint recognition, and iris recognition (i.e. Multi Biometric System) & aims at concatenating three biometric features namely face, fingerprint and iris to minimize False Accept Rate(FAR) and False Reject Rate(FRR). And shows using these biometrics has good result with high accuracy using fuzzy logic at decision level. In greater detail, fuzzy logic based approach at decision level is used for concatenation. Fuzzy logic is used for the effect of each biometric result combination. The proposed multimodel system achieves interesting results with several commonly used databases.

Keywords: Biometric, Multibiometric (face, fingerprint, iris), fuzzy logic.

Reliability of Three Unit System with Two Type of Repair

Shiva and Sanjay Chaudhary

Institute of Basic Science,

Dr. Bhimrao Ambedkar University, Agra (U.P.)- India

Email: shivaarele@gmail.com

Abstract: This paper represents the reliability of a redundant system, which consists of three units with each one operable or failed. The failure can further divided into minor or major. Minor failure can be repaired by minor repair, but a major failure required a major repair. So two repair facilities are considered. The system completely fails on the failure of all units. Three similar units are in the system where one unit works as main and others in cold standby. An imperfect switch is used to on standby unit which takes sometime in switching. Failure rate and repair rate and repair rate are constant. Failure rate and repair rate follow exponential distribution. Differential equation and Laplace transformation are used. Hence reliability is obtained by the sum of the probabilities of all operable states.



A New Common Fixed Point Theorem for Two Pairs of Mappings Satisfying Implicit Contraction Condition in Triangular Intuitionistic Fuzzy Metric Spaces

Manoj Ughade

Government J.H. Post Graduate College, Betul, (M.P) - India

Email: manojhelpyou@gmail.com

Abstract: Our goal of this paper is to prove a new general common fixed point theorem for two pair of mappings under a different set of conditions using the idea of weakly compatible mappings satisfying a general class of contractions defined by an implicit relation in the frame work of triangular intuitionistic fuzzy metric space, which unify, extend and generalize most of the existing relevant common fixed point theorems from the literature. Some related results and illustrative an example to highlight the realized improvements is also furnished.

Keywords: Triangular intuitionistic fuzzy metric space; common fixed point; implicit relation; weakly compatible mappings; contractions.

A Survey on Development of Association Rule Mining Model for Gender Classification Over Fingerprint Database

Meena Tiwari and Ashish Mishra

RKDF, University, Bhopal (M.P.)-India

Lakshmi Narain College of Technology, Bhopal (M.P.)- India

Email: ashish.mish2009@gmail.com

Abstract: Each person's fingerprint structure is unique and is developed for biometric authentication system than others because fingerprints have advantages such as: feasible, differ from each other (distinct) permanent, accurate, reliable and acceptable all over the world for security and person identity. Fingerprints are considered as legal proof of evidence in courts of law all over the world. Fingerprint recognition for Gender classification method done through various techniques like Support Vector Machines (SVM), Neural Network(NN), Fuzzy- C Means (FCM). Comparatively a small number of machine vision techniques have been suggested for gender recognition and classification so identifying the gender from fingerprints is an important step in forensic anthropology to shorten the list of suspect search. Very few researchers have worked on gender classification using fingerprints and have gained competitive results. This paper presents Gender classification using association rule mining and classification approach. It is also proposed to combines the elaborate study of various methods and strategies with their comparative measures and to forecast results. This will help the researcher to undertake a comprehensive review and to carry out further research in association rule mining model for gender classification over fingerprint.

Keywords: Support Vector Machines , Neural Network, Fuzzy- C Means , Gender classification

Different explicit rules of Combinatorics in ancient India

Nazida Shaikh and V. K. Gupta

School of Studies in Mathematics, Vikram University, Ujjain (M.P.)-India

Director, Ramanujan Research Centre of Mathematics,

Govt. Madhav Science P.G. College, Ujjain (M.P.) - India

Email: shaikhnazida@yahoo.in

Abstract: The topic 'Combinatorics' deals with counting problems, which are usually associated with selection of some objects from a given collection and their arrangements in a certain situation. The principles and methods of solving different combinatorial problems were well-known to the scholars of ancient India since the Vedic period. But no chronological account of contributions of Indian scholars in the field has been made available so far. In this paper author's mentioned some work of Combinatorics by ancient mathematicians, astronomers, ancient scientist and medical scribe. Author also highlighted various mathematical formulae and different explicit rule given by the ancient Indian mathematician time to time.

Common Fixed Point Theorems in *Ab*-Metric Space

Neetu Sharma

Govt. P.G. College, Rajgarh, M.P., India

Email: neetu.vishu@gmail.com

Abstract: In this paper, I prove some Common Fixed Point Theorems satisfying new type of rational inequality in the n -dimensions *Ab*-Metric Spaces. In this paper, I modify new contractive conditions and give an application to verify the obtained results.

Keywords: common fixed point; *Ab*-Metric space; contractive mapping;

AMS Subject Classification (2010): Primary 47H10, Secondary 54H25

Influence of Wind on Urban Atmospheric Boundary Layer characteristics at the Capital Region Delhi

Mamta Devi¹, Anjali S. Nair², Priyanka Singh³, Narender Lamba⁴, Kirti Soni⁵,
Mahavir Singh⁶ and Sangeeta Kapoor⁷

Physico-Mechanical Metrology (PMM) Division, CSIR-National Physical Laboratory,
New Delhi, India

Lakshmi Narain College of Technology & Science, Bhopal (M.P) - India

Email: soniks@nplindia.org

Abstract: Remote sensing techniques play a significant role in understanding the dispersion behaviour of air pollutants with the study of Atmospheric Boundary Layer (ABL) height and characteristics. The vertical structure of the ABL plays an important role in meteorological and environmental prospect as it impacts the pollutant concentrations near surface and wind velocity. Acoustic Sounder (SODAR) technology employs the use of echograms to study the specific ABL parameters which includes the depth of ABL and its structure. Complex phenomenon associated with Atmospheric Boundary Layer can be better understood with the help of SODAR echograms and it can be better utilized for understanding the entire complex phenomenon happening in lower layer of atmosphere i.e., lower part of troposphere. The present study incorporates the SODAR echograms data for the analysis of the correlation between the parameters influencing the climate and the ABL height. The research also considers the variable structures produced by the SODAR during the month of January 2020. SODAR echograms represent different structures considering the atmospheric fluctuation due to the turbulence. This turbulence is mainly influenced by the wind gradient and wind shear. The sensors installed at the apex of the Acoustic & Vibration Metrology building, CSIR-National Physical Laboratory, New Delhi is taken into account for establishing the correlations between the variables.

Keywords: SODAR, Wind, Atmospheric Boundary Layer, Turbulence

Characteristics Ventilation Coefficient over Delhi during summer

Priyanka Singh¹, Mamta Devi², Anjali S. Nair³, Narender Lamba⁴, Kirti Soni⁵, Mahavir Singh⁶
and Sangeeta Kapoor⁷

Physico-Mechanical Metrology (PMM) Division, CSIR-National Physical Laboratory,
New Delhi, India

Lakshmi Narain College of Technology & Science, Bhopal (M.P) - India

Email: soniks@nplindia.org

Abstract: The diurnal and seasonal variation of ventilation coefficient studied using a Remote sensing technique SODAR (Sound Detection and ranging); it gives real-time continuous ABL (Atmospheric Boundary Layer) height data and attached metrological sensors give metrological parameters data such as wind speed/direction, relative humidity and temperature. The diurnal variability is a dominant feature of the ABL, which plays an important role in the exchanges of heat, momentum, moisture, and chemical constituents between the surface and free atmosphere. The ventilation coefficient is calculated using ABL height and average wind speed. The ventilation coefficient is an atmospheric condition that indicates the air quality and pollution potential. This study is for the period of summer (April to June) 2019 over National capital Delhi and its outskirts. The height of the ABL during the different stages of its diurnal evolution, namely, the Stable Inversion layer, convective boundary layer (CBL), and Nocturnal boundary layer (NBL), are discussed and the effect of convection and wind speed on the ventilation coefficient is also analyzed. In this study, the correlation between the wind speed, temperature and relative humidity with the ventilation coefficient is determined. Diurnal and seasonal variation of ventilation coefficient gives knowledge about the day to day weather phenomena for air quality management. The result shows that the Temperature and wind speed are influencing positively to the ventilation coefficient during the summer seasons and convective boundary layer height growths and falls during the day time depending on the increase and decrease of temperature.

A study of queuing model with the analysis of payment mode and waiting time in supermarket

Sadhna Singh¹, R. K. Srivastava² and Amendra Singh³

^{1,2} S.M.S. College, Jiwaji University, Gwalior (M.P.)

³ Institute of Basic Science, Dr. Bhimrao Ambedkar University, Agra (U.P.)- India

Email: sadhna20singh@gmail.com

Abstract: This paper deals with digital payments and cash payments in supermarkets. Initially we take two counters for comparison of digital and cash payments. The first counters for digital payments and the second for cash payments, and calculate billing times from both counters. Our aim is to reducing the customers waiting time by increasing the number of servers according to the conditions, both digital and cash payments. The analysis of various parameters of the queuing system, calculate utilization factor, service rate, arrival rate, calculate idle bill payment counter, customer satisfaction rates, and waiting time. After analyzing the parameters of the parameters of queuing system model, it is observed that digital payments save time.

Diagnosis of ocular diseases by processing OCT images

Shweta Chouksey and Sunil Phulre
LNCT, University, Bhopal (M.P)-India
Email: sunilp@lnct.ac.in

Abstract: Optical Coherence Tomography (OCT) images is a current active area in medical image analysis to assist ophthalmologist in the early diagnosis of ocular diseases such as blindness due to diabetes. Machine Learning and Deep Learning algorithms are used to predict the disease occurrence using image dataset. The proposed work is integration of collection of OCT image dataset(online and offline), feature extraction and preprocessing of dataset, implementation of image processing and linear prediction model using python for data science. Feature-based HOG-LSVM is applied for the features like inner limiting membrane, Bruch's Membrane, retinal pigmented epithelium, geographic atrophy. The results will be demonstrated for the performance measures precision, recall, accuracy, AUC, average correlation coefficient, Cohen's kappa (κ),and distance-based disagreement (DbD) factors.

LNCT Group of Colleges

Working Towards Being The **Best**

LNCT, Bhopal

Kalchuri Nagar, Raisen Road



JNCT, Bhopal

New Chouksey Nagar, Bairasia Road



LNCTS, Bhopal

Kalchuri Nagar, Raisen Road



LNCTE, Bhopal

Kalchuri Nagar, Raisen Road



LNCP, Bhopal

Kalchuri Nagar, Raisen Road



LNCT- MBA | MCA, Bhopal

Kalchuri Nagar, Raisen Road



LNCT, Jabalpur

Near Bhedaghat Chowk



LKCT, Indore

Rau - Pithampur Road



CEC, Bilaspur

Lal Khadan, Masturi Road



RCDS, Bhopal

Near Raja Bhoj Airport, Gandhi Nagar



LNCT UNIVERSITY, Bhopal

Sarvadharam C- Sector, Kolar Road



Department of Engineering Mathematics
Lakshmi Narain College of Technology & Science
Kalchuri Nagar, Raisen Road, Bhopal 462022, (M.P.)
Phone: +91-755-6185300, 91-755-6685400
Email: hodmathslncts@lnct.ac.in | www.Lnct.ac.in