

संख्या

π SANKHYA

NEWSLETTER

Volume 4 | Issue 01 | Jan-June 2024

DEPARTMENT OF MATHEMATICS

**JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY, NOIDA
(DEEMED TO BE UNIVERSITY UNDER SECTION 3 OF UGC ACT 1956)**



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Message from the Head of the Department

It is my immense joy and excitement to present another issue of **SANKHYA**, the newsletter of the Department of Mathematics. This edition, Volume 4, issue 1 of **SANKHYA** reflects the numerous achievements of our faculties and students. As we reflect on the past few months, I am filled with immense pride and gratitude for the achievements and progress we have made together. Our department continues to excel in research, teaching, and community engagement.



Prof. Alka Tripathi

In this issue, you will read about ground breaking research initiatives, different events organized and achievements of our faculties and students. These stories are a testament to the dedication and hard work of our entire department. I am particularly excited about the new programs and collaborations we have launched, which are expanding our horizons and creating new opportunities for our students and researchers. I would like to extend my heartfelt thanks to the editorial board for their efforts in bringing this newsletter to life, and to all of you for your contributions and engagement. Your involvement is what makes our department vibrant and dynamic.

I hope all of you will enjoy reading this issue.

With Best Wishes

Prof. Alka Tripathi

Head of the Department of Mathematics



Message from the Editorial Team

We are delighted to welcome you to this edition of our newsletter “SANKHYA”. The newsletter committee would like to start by heartily greeting you and providing you with some updates. Our goal is to keep you informed about the latest news, events, and achievements within our department. This issue features a variety of articles highlighting the outstanding work of our faculty, students, and staff. You will find updates on recent research projects, summaries of conferences and workshops, and spotlights on the remarkable accomplishments of our community members. We also want to hear from you! Your contributions and feedback are invaluable in making this newsletter a vibrant and engaging resource for everyone. Please feel free to share your stories, achievements, or suggestions for future editions. We also thank our Vice-Chancellor, Pro-Chancellor, and Head of Department for their support in allowing us to serve on the departmental newsletter committee.

We hope you enjoy reading this issue as much as we enjoyed putting it together. Thank you for being a part of our dynamic and dedicated community.

Best wishes,

The Editorial Board



Dr. Amita Bhagat

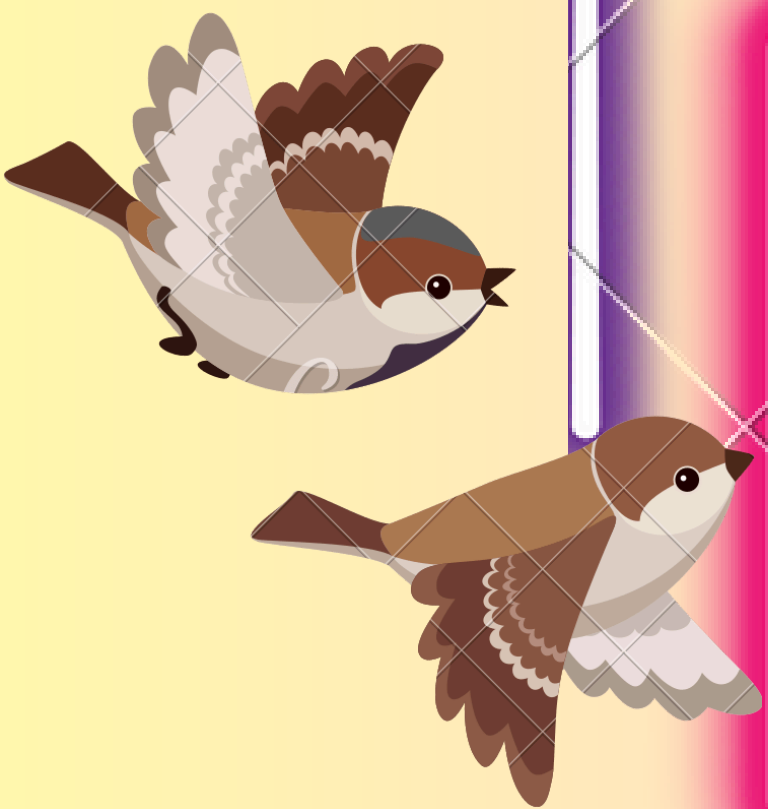


Dr. Richa Sharma



Events Organized by the Department (Januray-June, 2024)





7th International Conference on Recent Advances in Mathematical Sciences and its Applications (RAMSA-2024), February 29-March 02, 2024

The Department of Mathematics, JIIT Noida organized 7th international Conference on Recent Advances in Mathematical Sciences and its Applications (RAMSA-2024), February 29-March 02, 2024 with an objective to unite distinguished mathematicians, scientists, engineers, industry researchers, and scholars in mathematics on a shared platform. The event aims to foster the exchange of ideas on research findings and recent advancements across various fields of mathematics, sciences, and engineering.



Noida, Uttar Pradesh, India
J9HC+WHF, Annapurna Rd, A Block
Pradesh 201309, India
Lat 28.629752°
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29/02/24 10:58 AM GMT +05:30

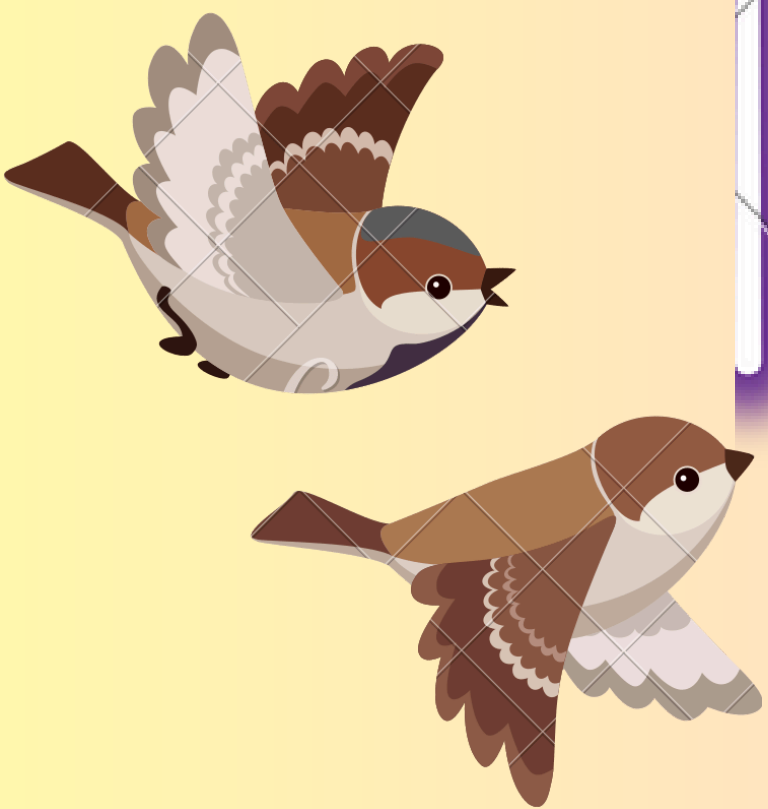
CONFERENCE CHAIR

Prof. Alka Tripathi

CONVENERS

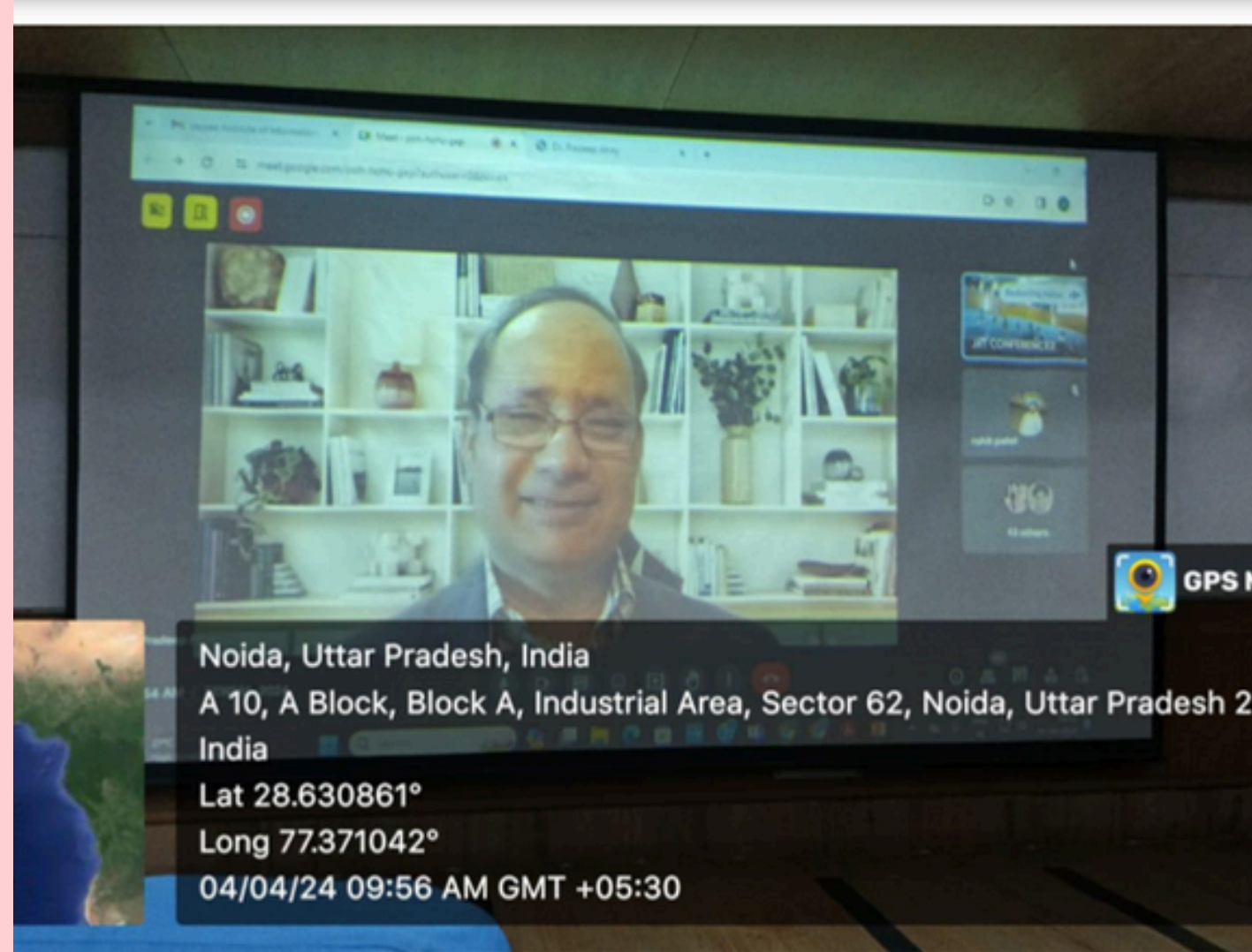
**Dr. Pankaj K. Sriavstava
&
Dr. Dinesh C. Bisht**





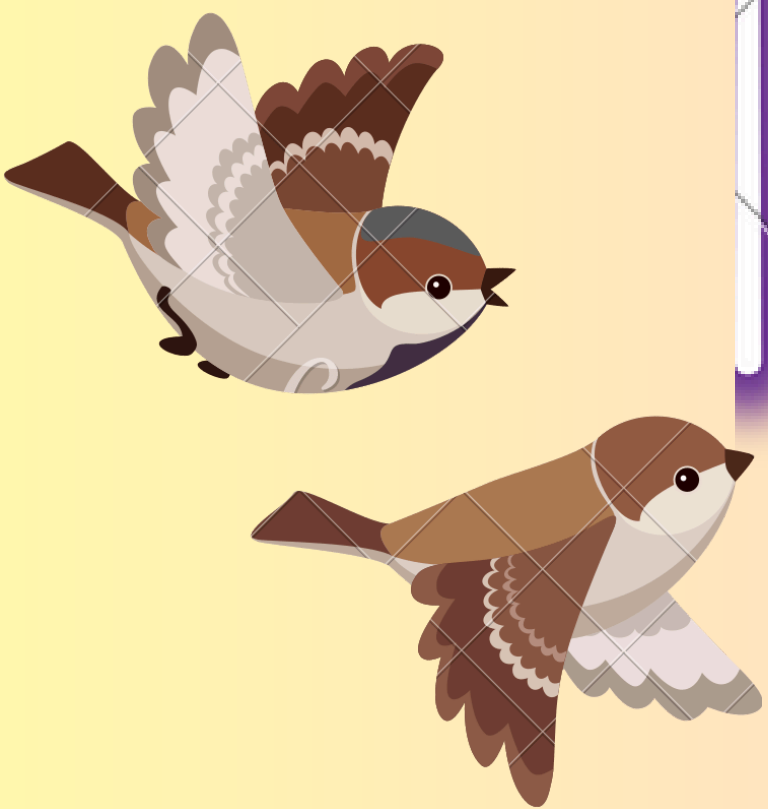
Teacher's Enrichment Workshop on “Elements of Data Management and Analytics” April 01 - 13, 2024

The Department of Mathematics organized two weeks Teacher's Enrichment Workshop on Mathematical foundations of Data Science from April 01-13, 2024. The aim of this workshop is to bring together academicians, industrialists and aspirants on single platform for mutual discussion about data management, security, privacy, regression, classification and more.



Organized by

**Dr. Himanshu Agarwal
&
Dr. Shashank Goel**



Orientation of the Certificate Course in Data Analytics for M.Sc. Students January 06, 2024

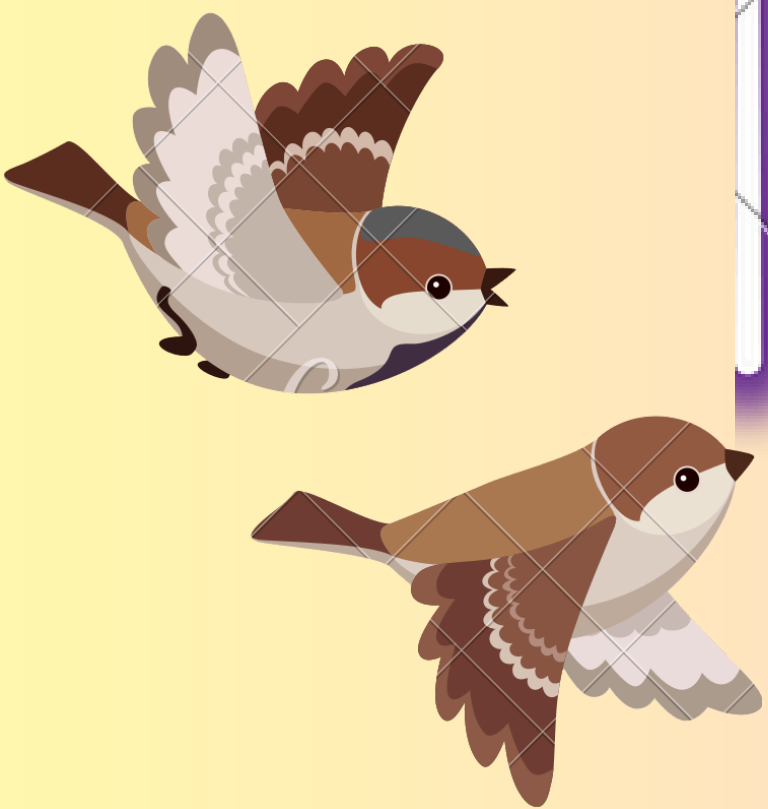
The Department of Mathematics, Jaypee Institute of Information Technology, Noida, India organized orientation of the newly launched Certificate Course in Data Analytics as a part of the Master of Science (M.Sc.) program. In the event, Ms. Deepti Agarwal, Software Engineer in Tata Consultancy Services highlighted the opportunities for postgraduate students after pursuing the Certificate Course in Data Analytics.



Organized by

Dr. Himanshu Agarwal

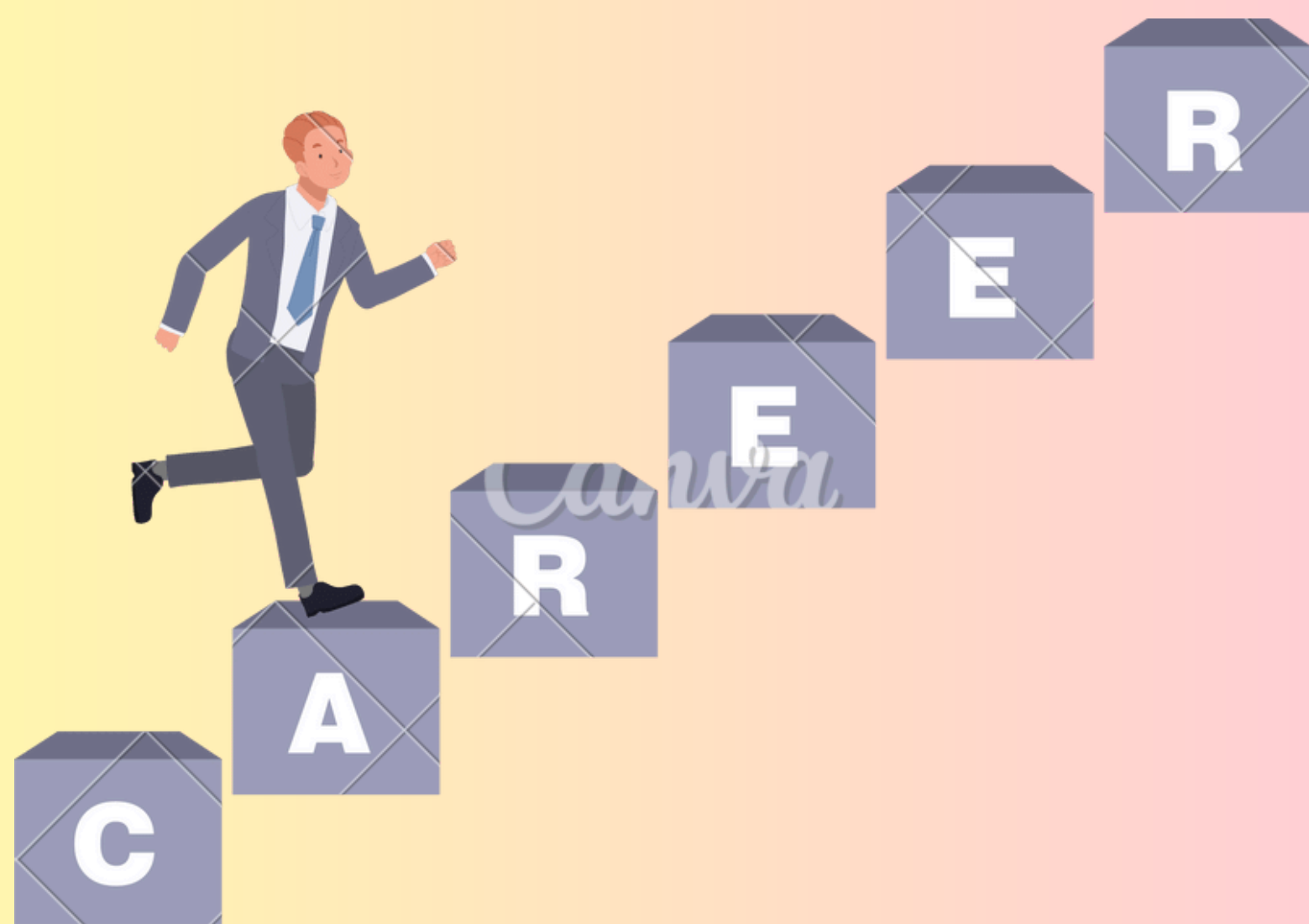




Career Guidance Session April 15-20, 2024

Six-day interactive session on Career Guidance for M.Sc. students was conducted by the Department of Mathematics in offline mode from April 15-20, 2024 between 03:00-04:00 PM. The faculty members of our department shared their views and experiences as well as provided tips to crack CSIR-UGC-NET/GATE/NBHM and other competitive exams with the students. The objective of this activity was to motivate and guide students to emerge as winners in their journey of career and life.

To make each session more interactive and fruitful, variety of interesting questions on different topics of Mathematics were discussed. Along with strategic discussion, some previous years' questions and syllabus of aforementioned competitive exams were also discussed with the students. The conversation and interaction between students and faculty members made the session more interesting and beneficial for students.



Organized by

Dr. Pato Kumari



One-week Teacher's Training Program for Jaypee Public Schools May 20-25 , 2024

One-week Teacher's Training Program for PGT teachers of Jaypee public schools was organised by Department of Mathematics, JIIT Noida from /05/2024 to 27/05/2023. The training program consisted of a series of lectures and hands-on activities designed to address the diverse needs and skill levels of participating teachers. This program was helpful in improving pedagogical skills and knowledge of instructional strategies.



Organized by

Dr. Anuj Bhardwaj



Invited Talk by Prof. Eberhard Malkowsky January 18, 2024

Title of the Talk: Pseudo-Spheres and Regularity vs Compactness

Prof. Eberhard Malkowsky is affiliated with the University of Giessen, Germany and currently working as a fulltime Professor at Drzavni University Novi Pazar, Serbia. His interest include functional analysis, summability, matrix transformations, measures of noncompactness and operator theory. The study of pseudo-spheres is part of every course on Differential Geometry. We introduce pseudo-spheres as surfaces of rotation generated by tractrices.



Organized by

Dr. Mohd. Sarfaraz

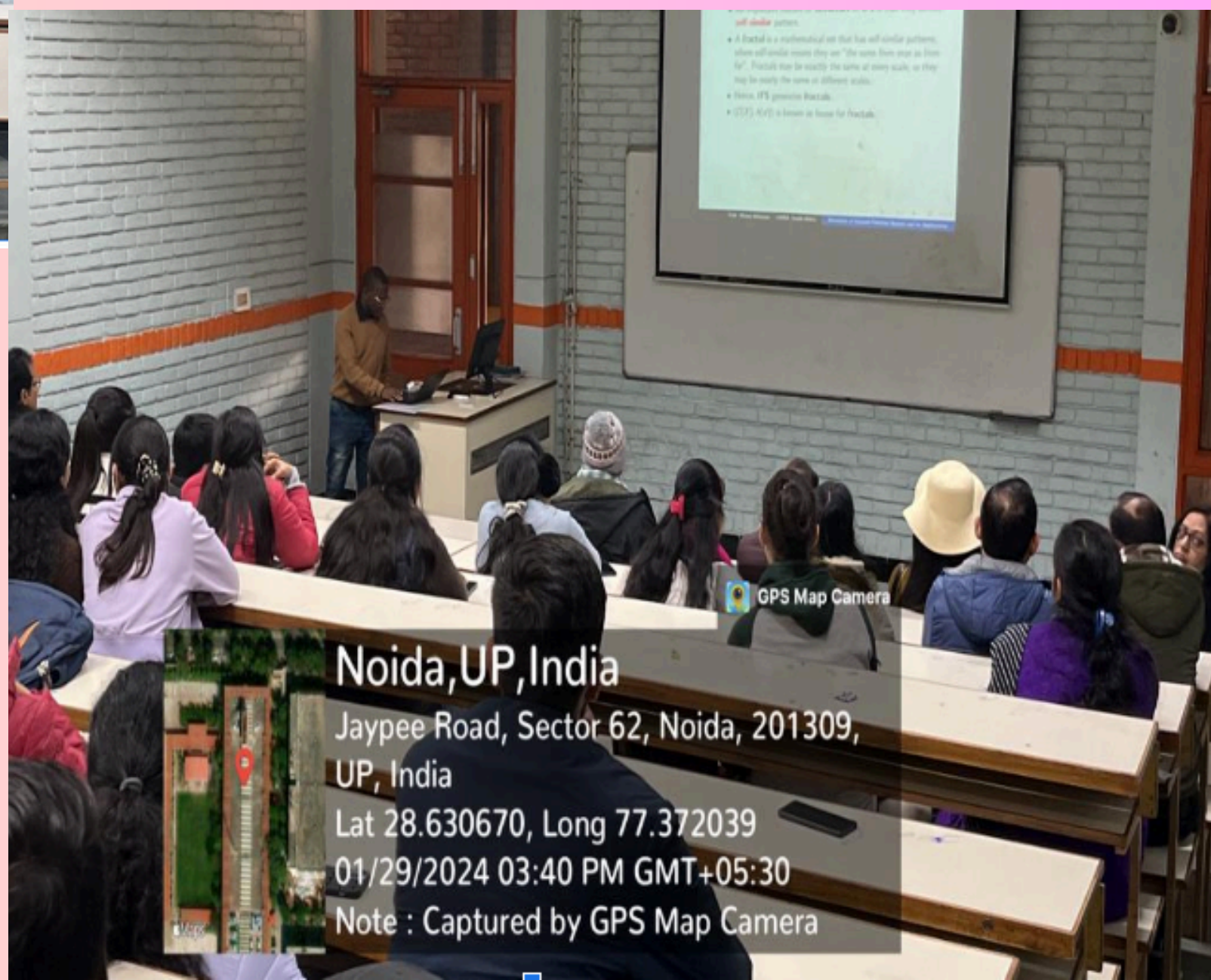
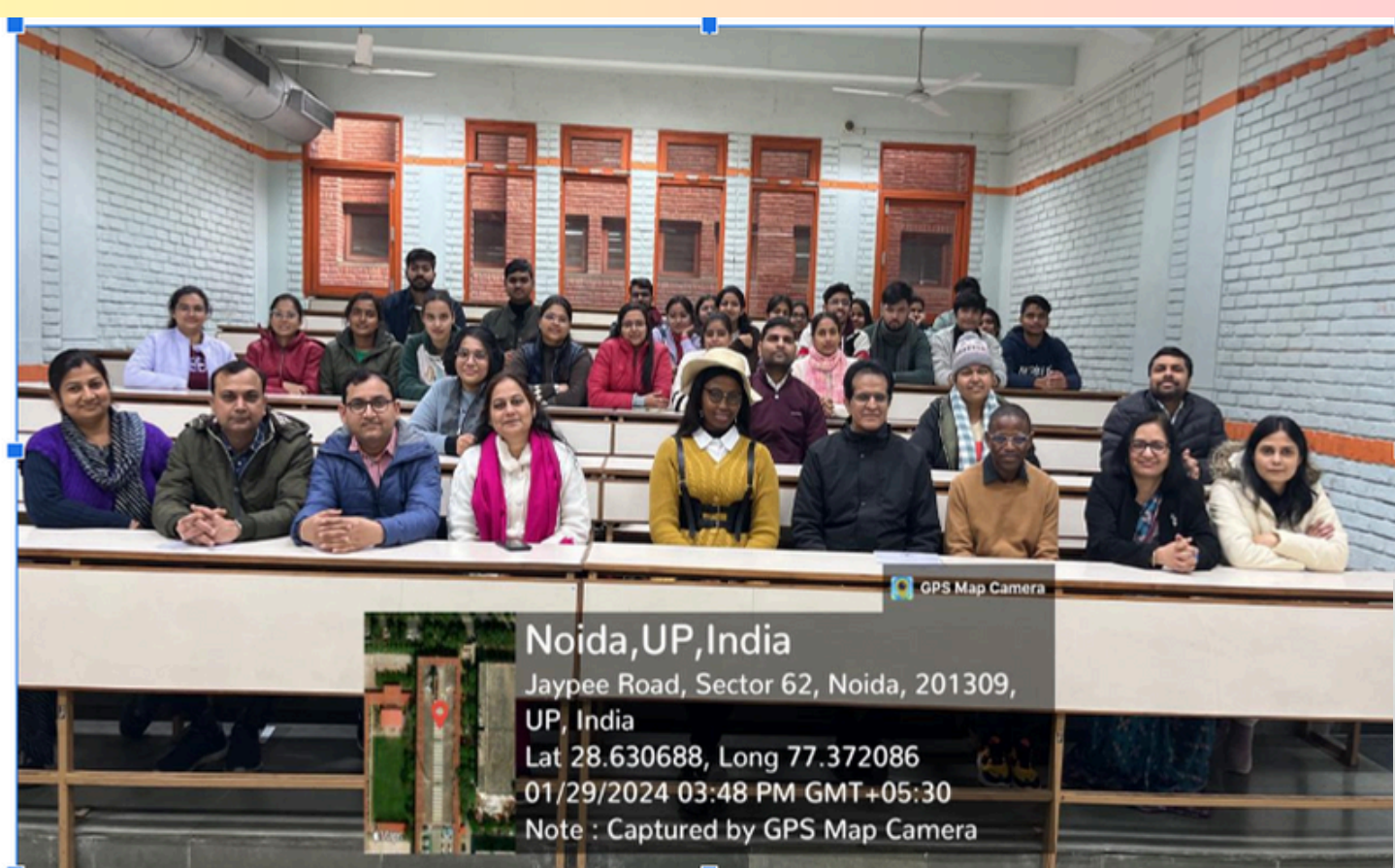




Invited Talk by Prof. Melusi Khumalo January 29, 2024

Title of the Talk: Iterated Function System of Generalized Cyclic Contractions in Partial Metric Space

Prof. Melusi Khumalo is Chair, Department of Mathematical Sciences, College of Science, Engineering and Technology, University of South Africa, South Africa. In this talk, the speaker Prof. Melusi Khumalo, introduced various concepts of contraction conditions and related existence and uniqueness results with applications in diverse areas of knowledge and presented the development of the metric fixed point theory in during the last two decades.



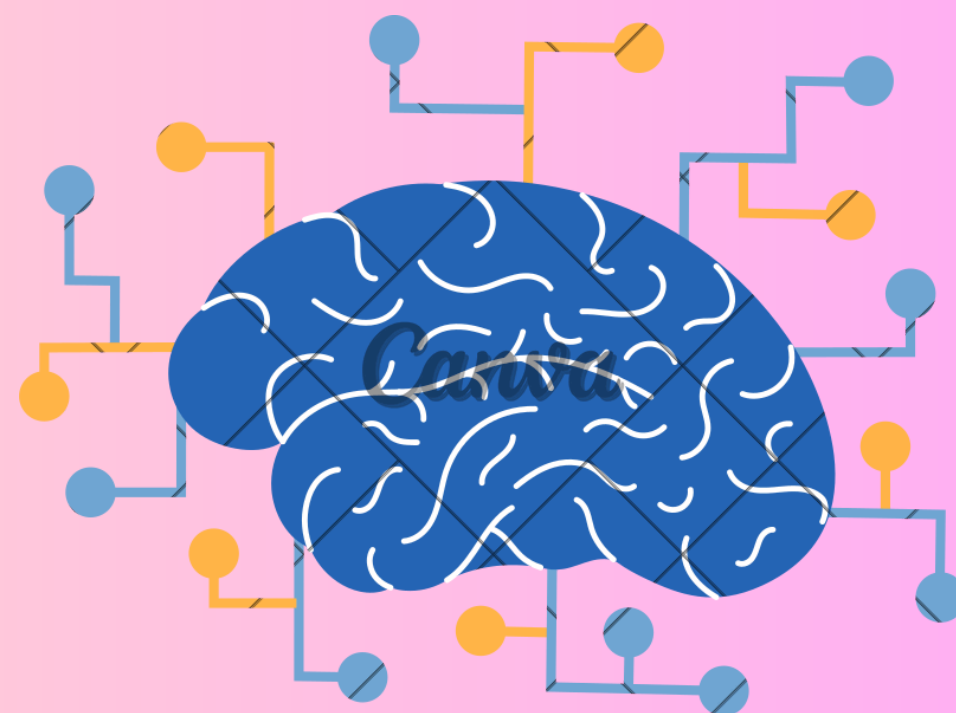
Organized by
Prof. B.P. Chamola



Invited Talk by Dr. Seda Keratake April 24, 2024

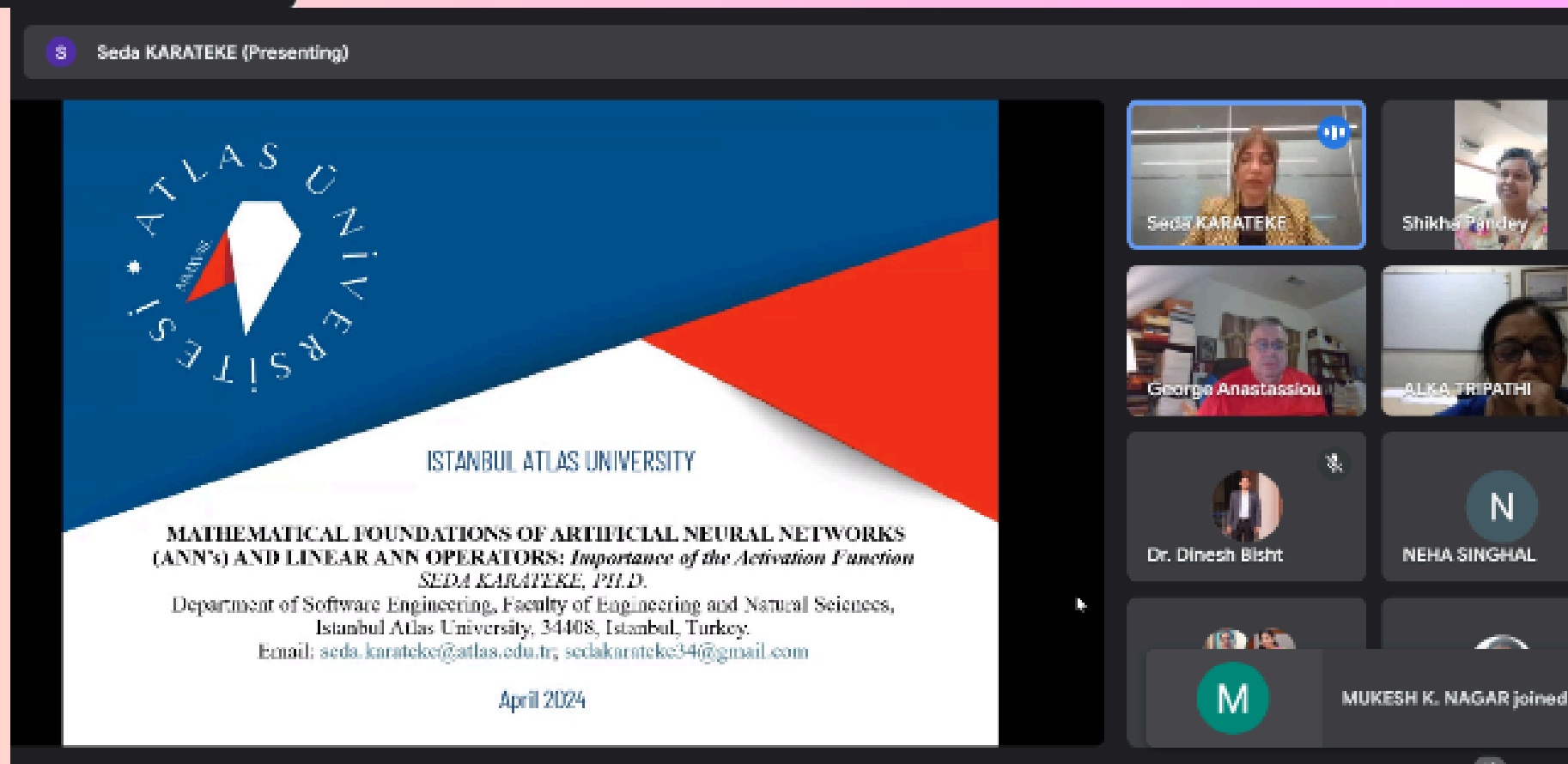
Title of the Talk: Mathematics of Neural Network Operators

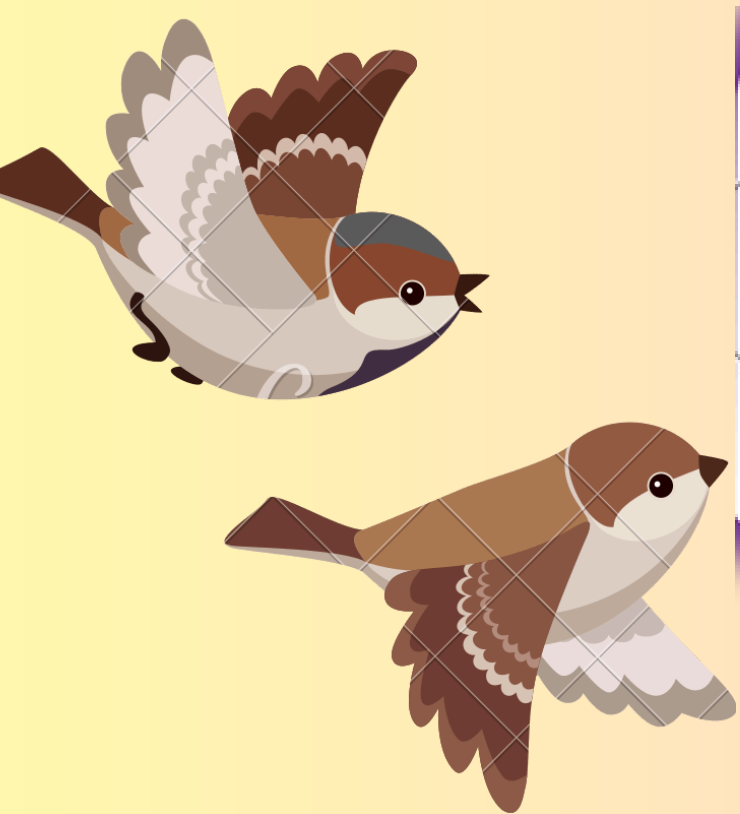
Dr. Seda Keratake is faculty in the Department of Software Engineering, Istanbul Atlas University, Istanbul, Turkey. In the proposed talk, the Artificial neural networks (ANNs) which are nonlinear mathematical tools that aim to simulate the functioning of the human brain through simple units called artificial neurons arranged in structures known as are discussed as they are widely used in many scientific disciplines with high potential in classification/pattern recognition or regression tasks.



Organized by

Dr. Shikha Pandey





Invited Talk by Prof. Manohar Lal May 01, 2024

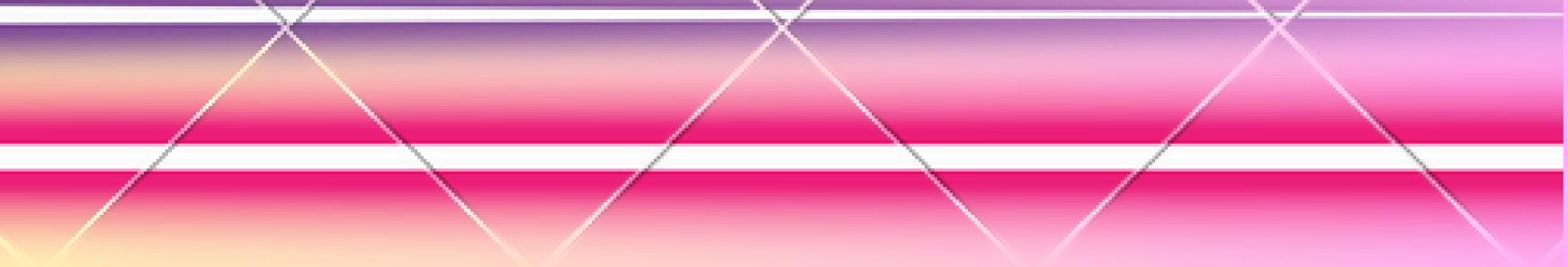
Title of the Talk: The State of Art in Artificial Intelligence: Theory, Technology, Applications & Implications

Prof. Manohar Lal is Former Director, SOCIS, Indira Gandhi National Open University (IGNOU), New Delhi India. An informative and appreciable talk was conducted by the department of Mathematics on the topic “The State of Art in Artificial Intelligence: Theory, Technology, Applications & Implications” on May 01, 2024 in offline mode to have expert knowledge on the concerned area.

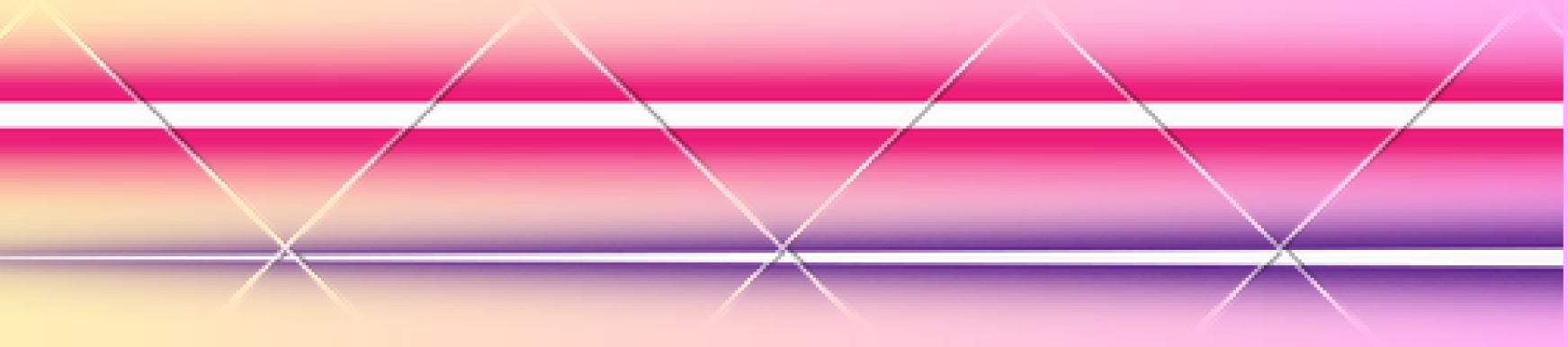
Organized by

Prof. Alka Tripathi





New Initiative:
B.Tech
(Mathematics and Computing)





B.Tech (Mathematics and Computing)

B.Tech – Mathematics and Computing (M&C): The B.Tech. in Mathematics and Computing, are drawn from the fields of computer science, mathematics, and statistics. Graduates of this programme will have a solid foundation in mathematics, statistics, and computer-related subjects as well as extensive theoretical understanding. Students can choose Programme Electives from the Department of Mathematics and Open Electives from other departments within the institute. Students will get opportunities for learning as well as developing computational techniques which can be used in many fields such as healthcare, agriculture, security, banking, finance, e-commerce, education, forensics, etc. The students will be trained towards proficiency in mathematics and computer science by a group of dedicated faculty members of JIIT.



JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY (JIIT) NOIDA
(DEEMED TO BE UNIVERSITY UNDER SECTION 3 OF UGC ACT 1956)

BACHELOR OF TECHNOLOGY
MATHEMATICS AND COMPUTING (B.TECH. M&C)

ADMISSION OPEN FOR SESSION 2024-25

Embark on an Enriching Academic Journey with JIIT

Join us at Jaypee Institute of Information Technology (JIIT), NOIDA for the B.Tech. in Mathematics and Computing in the academic year 2024-25. Discover the perfect blend of computer science, mathematics, and statistics, preparing you for a world of opportunities in today's dynamically changing industry requirements.

WHY CHOOSE B.TECH. MATHEMATICS AND COMPUTING AT JIIT?

- Comprehensive Curriculum:** Gain expertise in computational techniques essential for modern industries.
- Expert Faculty:** Dedicated faculty members from prestigious institutions such as IITs, IIMs, NITs, IITs, etc., ensuring top-notch education.
- Cutting-Edge Facilities:** Access 47 computer labs equipped with state-of-the-art resources, providing you with the latest technologies.
- Ramangul High-Performance Supercomputing Facility:** Facility boasts eight NVIDIA A100 GPU cards, advanced compute nodes, massive RAM capacity, and high-speed connectivity for ground-breaking research.
- Research Excellence:** Immerse yourself in a rich research culture at JIIT with over 2000 publications, 15000+ citations, H-index 44, 12+ patents, and 100+ alumni startups.
- Global Collaborations:** Benefit from JIIT's ties with foreign universities, facilitating collaborative research and student exchange programs.
- Impressive Placement Records:**
 - Over 150 companies visit our campus annually for recruitment.
 - In 2022, our students secured the highest salary package of INR 1.15 crore.
 - In 2023, Atlasian offered a package of INR 82.89 lacs.

ELIGIBILITY CRITERIA:

- Candidates must have a minimum of 60% marks (55% for SC/ST) in aggregate in 10+2 or equivalent examinations.
- Compulsory subjects include Physics and Mathematics, along with one subject out of Chemistry, Computer Science, Electronics, Information Technology, Biology, Informatics Practices, Biotechnology, Technical Vocational Subject, Agriculture, Engineering Graphics, Business Studies, Entrepreneurship.
- A pass grade is required in all subjects.

ADMISSION PROCEDURE:

- JEE Based:** Merit will be determined based on JEE (Main) 2024 All India Rank (AIR).
- 10+2 Merit Based:** Minimum of 60% marks (55% for SC/ST) in aggregate in 10+2 or its equivalent. Merit will be prepared based on marks obtained in Mathematics, Physics, and one subject mentioned in the eligibility criteria.
- Direct Admissions:** Direct admission will be offered for a limited number of seats to candidates meeting the eligibility criteria.

Programs offered at JIIT: Diploma, B.Tech., B.Sc. (CSE), BCA, BBA, Int. M.Tech., M.Tech., M.Sc., MCA, MBA, Ph.D.

APPLY NOW!
Unlock Your Potential with B.Tech. Mathematics and Computing at JIIT!

Contacts:
Prof. Alka Tripathi, Head, Department of Mathematics, Email: alka.choubey@jiit.ac.in
Dr. Dinesh C. S. Bisht (Program Coordinator B. Tech. M&C), Email: dinesh.bisht@mail.jiit.ac.in
Mobile No: 9773908280

For more information visit our website



Jaypee Institute of Information Technology, A-10, Sector-42, Noida-201309, U.P. India, Website: <https://www.jiit.ac.in/>
Phone Number of Admission Cell: 0120 - 2594/173/179/300/400, Mobile: 7428630400/500/600/800

B.Tech (M&C)- Curricula (AY 2024-25)

https://www.jiit.ac.in/sites/default/files/Curricula_BT-M%26C.pdf

Contact:

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Email: alka.choubey@jiit.ac.in

Dr. Dinesh C. S. Bisht
(Program Coordinator B. Tech. M&C),
Email: dinesh.bisht@mail.jiit.ac.in



Research Publications

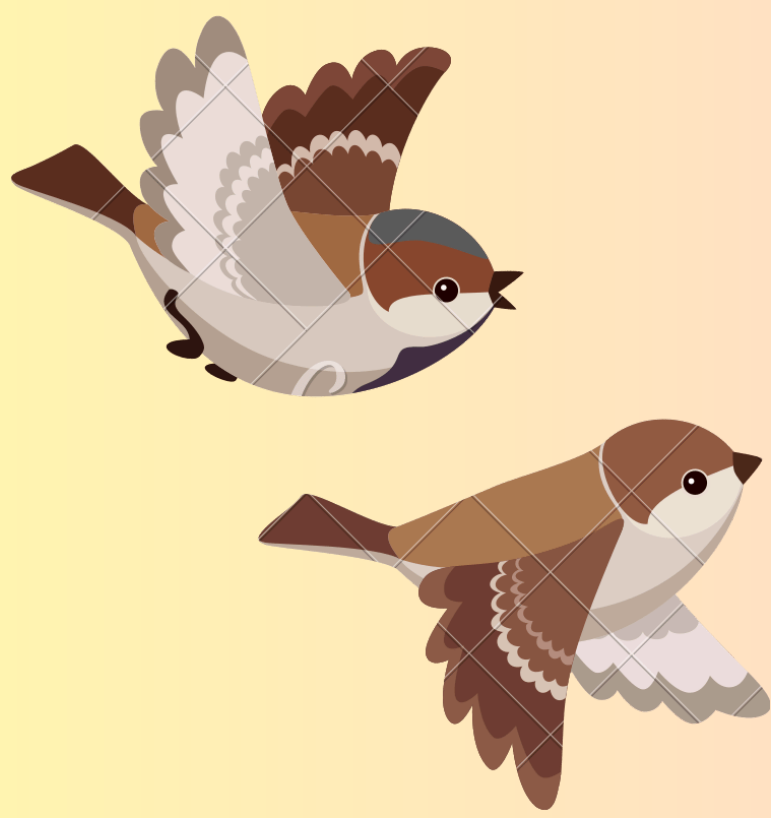
Journal Publications

- Ritu, Y. Gupta, Rach Adomian Decomposition Method to Solve Nonlinear Equations of Chemical Kinetic System, Journal of International Academy of Physical Sciences, Vol. 28 No. 1 (2024).
- Richa Sharma, Anshu Nagar, Analytical approach on stress analysis in a functionally graded piezoelectric annular disk with varying compressibility and varying density under internal pressure, International Journal of Non-Linear Mechanics, Vol. 162 (2024), pp. 104723.
- Ranjeet Kaur, Alka Tripathi, Statistical Analysis of Lexemes generated in 'C' Programming using Fuzzy Automation: An Empirical approach to NextGen Software, Journal of Intelligent & Fuzzy Systems, (2024), 46(1), 2537-2542.
- Rakhee Kulshrestha, Shruti Goel, Pooja Balhara, Transient analysis of enhanced hybrid spectrum access for QoS provisioning in multi-class cognitive radio networks, Wireless Networks Vol 30, pp3075-3099; 2024 .
- Mohd. Sarfaraz, MK Ahmad, A Novel System and Iterative Schemes for Generalized Variational Inclusion Problems and its Approximation Solvability, Sahand Communications in Mathematical Analysis, Vol. 21, pp: 197-211, 2024.
- A. Rajpal, S. K. Bhatia, S. Goel and P. Kumar, "Time delays in skill development and vacancy creation: Effects on unemployment through mathematical modelling", Communications in Nonlinear Science and Numerical Simulation, Vol. 130 (2024), 107758.
- C. Thangaraj, D. Easwaramoorthy, Bilel Selmi and B. P. Chamola, Generation of fractals via iterated function system of Kannan contractions in controlled metric space, Mathematics and Computers in Simulation 222 (2024), 188-198.
- A. Gupta, M. Sharma and A. Srivastava, "Intelligent Software Bug Prediction Framework with Parameter-Tuned LSTM with Attention Mechanism Using Adaptive Target-Based Pooling Deep Features", Journal of Information & Knowledge Management, Vol. 23, No. 03, 2450004 (2024).
- D. Sarkar and P. K. Srivastava: Recent development and applications of neutrosophic fuzzy optimization approach, "International Journal of System Assurance Engineering and Management", 15, 2024, 2042-2066.

- D. Sarkar and P. K. Srivastava, "Multi-objective optimization of flexible fuzzy job shop scheduling problem under neutrosophic environment". *Mathematics in Engineering, Science and Aerospace*, 15(2), (2024) 383-400.
- D. Sarkar and P. K. Srivastava, "A neutrosophic game theory approach for multi-objective telecom market share problem", *Nonlinear Studies*, 31(2), (2024) 389-411.
- D. C. S. Bisht, Y. Singh, G. Goyal, and R. Kumar, "Intuitionistic fuzzy set entropy: A novel measure for uncertainty management in complex group decision-making," *Mathematics in Engineering, Science and Aerospace (MESA)*, vol. 15, no. 2, pp. 467-486, 2024.
- P. Kumari, R. Srivastava, Parametric study of stresses induced due to moving load on irregular interface of self-reinforced layer over isotropic substratum, *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, 46 (28), 2024.
- P. Kumari, R. Srivastava, Analysis of quasi waves in orthotropic layer bonded between piezoelectric half-spaces with imperfect and sliding interfaces, *Journal of Vibration Engineering & Technologies*, 12, pp.1577-1602, 2024.
- Puneet Rana, Vishal Gupta and Lokendra Kumar, "Thermal instability analysis in magnetohybrid nanofluid layer between rough surfaces with variable gravity and space-dependent heat source", *International Journal of Modern Physics B*, Vol. 38, No. 04, 2450051, 2024.
- L. Kaur, W. Adel, M. Inc, H. Rezazadeh, and L. Akinyemi, Gaussian solitary wave solutions for nonlinear perturbed Schrödinger equations with applications in nanofibers, *International Journal of Modern Physics B*, Vol. 38, No. 24, 2450318, 2024.

Book Chapters

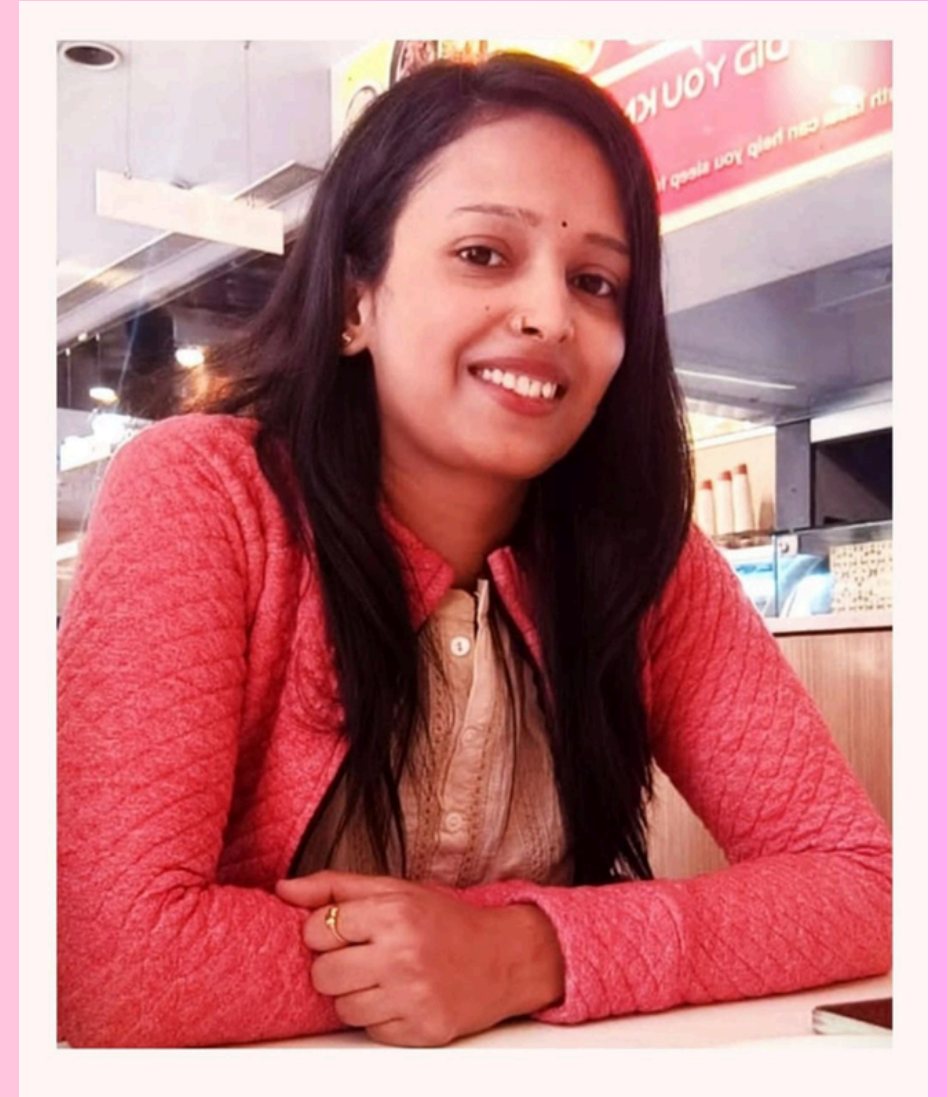
- Singh SJ, Ahlawat N, Panwar V. Computational analysis of viscoelastic properties in polymer composites. In: Verma A, Jain N, Sanjay MR, et al., editors. *Dynamic mechanical and creep-recovery behavior of polymer-based composites*. Netherlands: Elsevier; 2024. p. 291-309.
- S. R. Chakravarthy, S. Goel, V. Jain, S. Ozkar, R. Raj, Analysis of a Queueing System with Batch Poisson Arrivals and Batch Services in Blockchain Applications. In: *Intelligent Computing on IoT 2.0, Big Data Analytics, and Block Chain Technology*, CRC Press, 2024.



Ph.D Awarded

Name: Rupali Srivastav
E. No. : (20408001)

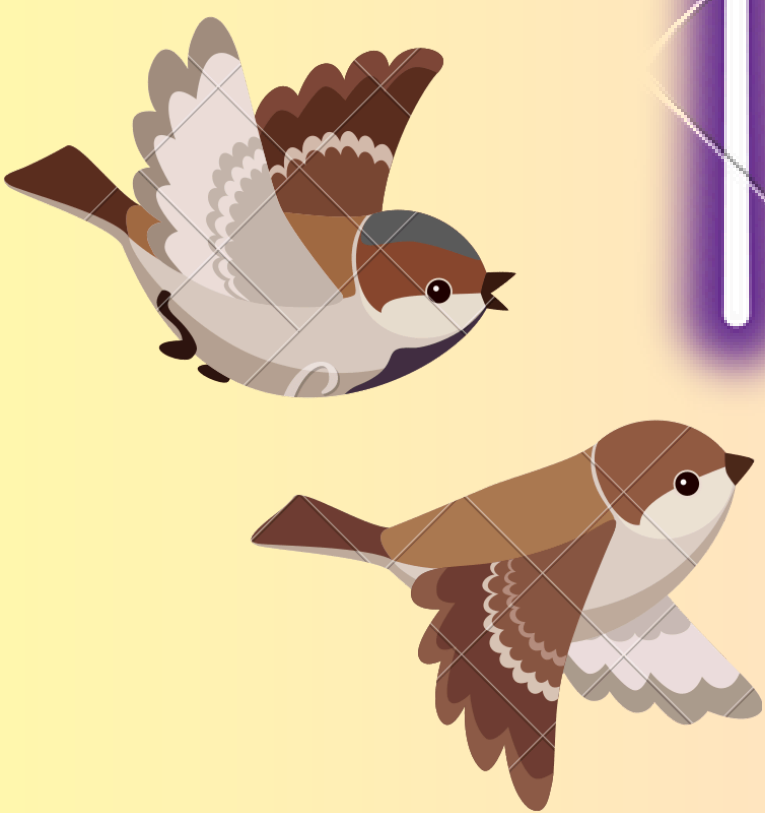
**Topic : Modeling of Seismic Waves in
Different Anisotropic Media with
Interfacial Complexity**



Recalling my time at JIIT Noida during my Ph.D, I am deeply appreciative for the outstanding training and experiences I had there. Joining amid the difficult times of the COVID-19 pandemic in 2020, I was first unsure about how my academic experience would proceed. However, the dedicated online support provided by JIIT ensured that I had access to the same rigorous academic environment.

Modern resources and facilities combined with the demanding academic atmosphere at JIIT made the perfect environment for my research. I am deeply grateful for the support of my professors, the opportunities provided by the institution, and the lifelong connections I made. The values and friendships I formed have continued to guide me both personally and professionally. JIIT Noida not only provided me with extensive information and abilities, but it also fostered in me, a desire for continual exploration and growth. I am immensely thankful to JIIT for their constant support and the profound transformation they have brought to my life.

I look forward to staying connected with the alumni network and contributing to the organization that has given me so much.



Upcoming Event

RAMSA 2025

January 23-25, 2025

The Department of Mathematics, Jaypee Institute of Information Technology, Noida, India is organizing the 8th International Conference on Recent Advances in Mathematical Sciences and its Applications (RAMSA2025) (<https://www.jiit.ac.in/jiit/RAMSA/>).



8th International Conference
on
**Recent Advances in Mathematical Sciences and
its Applications (RAMSA-2025)**
(January 23-25, 2025)
Organized in Offline mode
by
Department of Mathematics
Jaypee Institute of Information Technology
A-10, Sector-62, Noida, U.P.-201309, India
Website: www.jiit.ac.in/jiit/ramsa/

various disciplines of Engineering, Sciences and Management. JIIT is a NAAC Accredited, AICTE approved and NIRF Ranked Institute in Delhi NCR.

ABOUT THE HOST DEPARTMENT
Mathematics plays a key role in the development of modern sciences, engineering, management and many other important areas of activities. With this aim in mind the Department of Mathematics was established from the very inception with a Vision to attain excellence in teaching and research and become a leader in the field of mathematics and its applications. Besides catering to the basic needs of the various B. Tech., M. Tech. and Ph. D. programs of the Institute, it had a strong fervor towards research and development. The Department has a good blend of pure and applied mathematicians, which provides a vibrant research atmosphere. The specializations of the faculty members cover most of the important and emerging areas of Mathematics. The Department is also actively involved in its own research and development activities through its B.Sc., M.Sc. and Ph.D. Programs.

ABOUT THE CONFERENCE
The aim of this conference is to bring together learned mathematicians, scientists, engineers, researchers from industry and research scholars working in the different areas of mathematics on a common platform. The Conference provides an excellent opportunity to researchers, practitioners and education to present and discuss the recent innovations in mathematics for potential implementation in sciences and engineering. It focuses on strengthening the existing results along with identifying the practical challenges encountered with respect to various solutions adopted in the fields of Mathematics and its Applications. Moreover, it will provide an opportunity to enhance collaboration among researchers not only from the various parts of the country but also with those from abroad. The scientific program will consist of Keynote/plenary/invited lectures and parallel sessions for contributed presentations. The main emphasis will be on the vibrant implications aspects of applied mathematics for cultivating contemporary and advanced findings in multidimensional sphere of engineering and sciences. The invited lectures and refereed contributed papers will be published in the proceedings after due reviewing process by the committee of experts in various disciplines. The conference

proceedings of the previous series of RAMSA were published by AIP (Scopus Indexed), USA and Nova Publishers, USA.

CALL FOR PAPERS
The broad topics of interest include, but are not limited to, the following:

- Algebra and Its Applications
- Analysis and Approximation Theory
- Coding, Cryptography and Information Theory
- Computational Fluid Dynamics
- Computer Graphics & Animation
- Continuum Mechanics and Vibrations
- Differential Equations and Applications
- Discrete Mathematical Structures
- Fixed Point Theory
- Fractals, Chaos and Dynamical Systems
- Fuzzy Mathematics and Logic
- Image Processing
- Numerical Analysis
- Optimization and Its Applications
- Probability, Statistics and Stochastic Processes
- Theory of Computation
- Wave Propagation
- Wavelets and Applications

IMPORTANT DEADLINES

Submission of Abstract	October 10, 2024
Acceptance of Abstract	October 20, 2024
Submission of Full Length Paper	November 05, 2024
Notification of Acceptance of Paper	November 25, 2024
Submission of Final Manuscript	December 20, 2024

COMMUNICATION
All the communications may be addressed to:
Prof. Alka Tripathi, (Conference Chair)
Head, Department of Mathematics
Dr. Richa Sharma, Dr. Shikha Pandey, (Conveners)
Department of Mathematics



CONFERENCE CHAIR

Prof. Alka Tripathi


CONVENERS

Dr. Richa Sharma

&

Dr. Shikha Pandey

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A-10, Sector-62, Noida-201307, U.P., India
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REGISTRATION FEE

Participants	Mode	Registration Charges	
		Abroad	India
Academician/ Scientist	Offline	\$300	Rs. 6,500/-
Research Scholars	Offline	\$200	Rs. 3000/-
Jiit Students (Jiit Alumni)	Offline	\$100	Rs. 2500/-
Attendee	Offline	\$100	Rs. 2500/-
Extra per article submission	Offline	\$50	Rs. 1000/-

Important Points

- The registration fee for Offline Mode includes conference kit, lunch and tea during the conference.
- Only accepted and presented papers, after peer review, will be published in Indexed Proceedings/Journals (Proposal to be submitted). The publication charges (if any) for the full length accepted papers will be charged separately.
- For On the Spot Registration, 20% extra charges will be paid by the participants.
- For Early Bird Registration (Till November 30, 2024), 10% discount will be provided to the participants.

PAYMENT LINK:
Please refer the QR code and payment link:
<https://payments.cashfree.com/forms/RAMSA>

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Shri Manoj Gaur Ji, Executive Chairman, Jaypee Group.

PATRON
Prof. S. C. Saxena, Pro-Chancellor, JIIT
Prof. B. R. Mishra, Vice Chancellor, JIIT

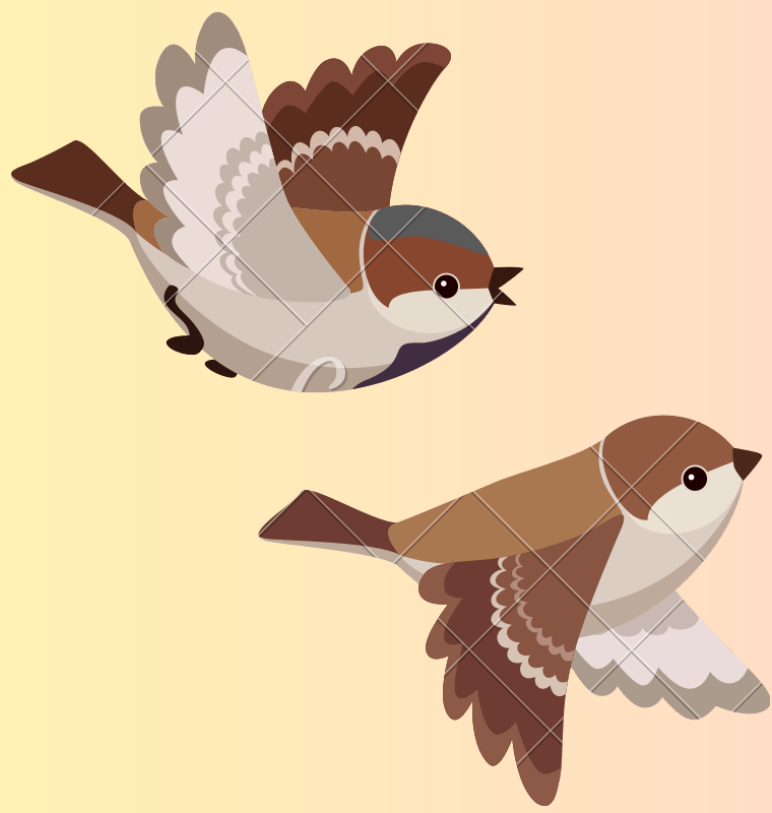
CONVENERS
Prof. Alka Tripathi, (Conference Chair)
Dr. Richa Sharma, Convener
Dr. Shikha Pandey, Convener

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Dr. Kamlesh Kumar Shukla,
Dr. Neha Ahlawat,
Dr. Neha Singhal,

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Prof. A. K. Srivastava, Banarus Hindu University, India
Prof. A. K. Bodabrata Chaud, IIT Madras, India
Prof. Mani Mehra, IIT Delhi, India

LIST OF INVITED SPEAKERS
Prof. Kiran R. Bhutani, The Catholic University of America, Washington, DC
Prof. Riddhi Shah, INSA Young Scientist Awardee (1999), Jawaharlal Nehru University, Delhi
Prof. Sangoma Kamaal, Delhi Technological University, Delhi
Prof. Vijay Gupta, Netaji Subhas University of Technology, Delhi

More To be added soon..



Penning by Faculty Members

From Data to Decisions: The Role of Mathematics in Trading and Investing

The Mathematics is at the heart of investment and trading, transforming the way we understand and interact with financial markets. Let's delve into some of the most important tools and technologies that leverage mathematical principles. First, statistical analysis is fundamental. By examining historical data, we can identify patterns and predict future market trends. This is like using the past to forecast the future. Then, we have Monte Carlo simulations. This method models various potential outcomes to assess risks and uncertainties in investment scenarios.

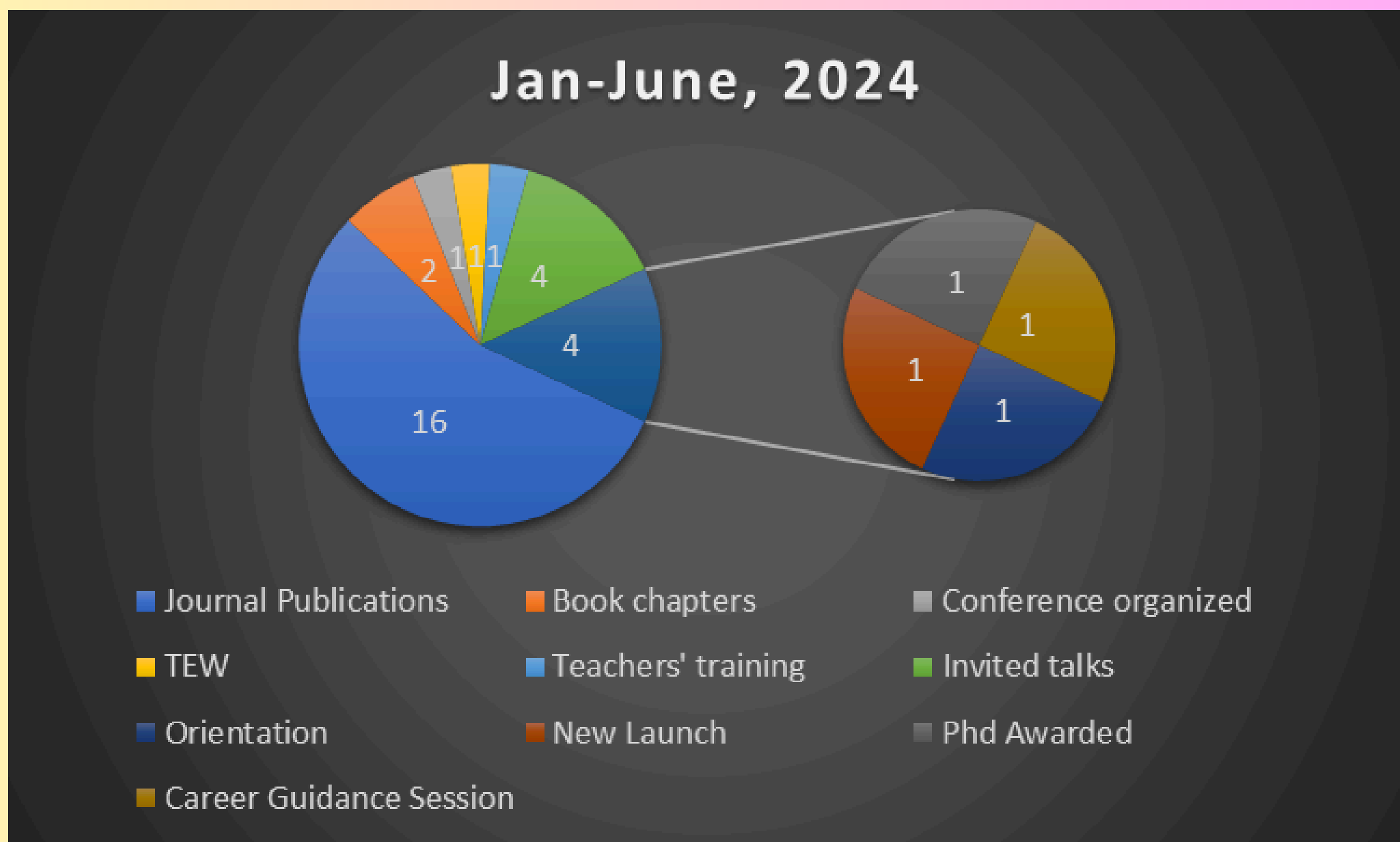


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It's like throwing a bunch of dice to see what might happen, giving us a range of possible results. Machine learning algorithms also play a crucial role. Regression models, decision trees, and neural networks sift through enormous data sets to spot trading signals and predict market movements. These algorithms are like having a super-intelligent assistant that helps us make sense of complex data. Quantitative models use advanced mathematics, including stochastic calculus and differential equations, to create pricing models for options and derivatives. They're the mathematical frameworks that help us understand the value of financial instruments. Algorithmic trading takes automation to the next level. It involves executing trades based on predefined criteria, enhancing both speed and efficiency. It's like having a robot trader that operates at lightning speed. Lastly, portfolio optimization techniques, such as the Markowitz model and the Black-Litterman model, help in constructing portfolios that balance risk and return. It's like carefully mixing ingredients to get the perfect recipe for investment success. Using these mathematical tools, we can make smarter decisions, manage risks more effectively, and navigate the financial landscape with confidence.



Sneak Peek: Jan-June 2024



Thanks to all the faculty members whose hard work in the form of research publications, achievements, Ph.D's completion and organisation of various academic events bring COUNT to above data that adds strength and glory to the Department of Mathematics.



A stylized illustration of a bird in flight, primarily blue with a white underbelly and a white patch on its wing. The bird is facing left with its wings spread. The background is a solid light pink. On the far left edge, a portion of a black letter 'T' is visible.



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