



**RAMAIAH  
UNIVERSITY**  
OF APPLIED SCIENCES

**Report on  
Seminar  
“Essential Mathematics for AI”**

**21<sup>st</sup> August 2023**

**Organized by:  
Department of Mathematics and Statistics  
Faculty of Mathematical and Physical Sciences  
Ramaiah University of Applied Sciences,  
RTC, IV Phase, Peenya Industrial Area,  
Bengaluru – 560 058**

- **Summary:**

In the world of Artificial Intelligence (AI), a solid foundation in mathematics is crucial for understanding the underlying principles and algorithms that power AI systems. This seminar aimed to provide undergraduate and postgraduate students with an insightful journey into the essential mathematical concepts that form the backbone of AI. From linear algebra's role in data representation and transformation to calculus's impact on optimization algorithms, attendees gained a clear understanding of how mathematical tools enable machine learning, neural networks, and other AI techniques. The seminar explored the key mathematical ideas that empower AI innovation and discover how they shape the future of technology.

- **Introduction:**

The seminar was held on 21<sup>st</sup> August 2023 at A206 from 11:00 AM to 1:00 PM. The speaker was Dr P. Rajendra, Associate Professor, Department of Mathematics, CMR Institute of Technology, Bengaluru. With 18 years of academic and research experience, Dr. P. Rajendra is a highly competent Data Science/Machine Learning specialist. From JNTU in Hyderabad, he earned a Ph.D. in mathematics with a focus on systems theory and computer modeling. He is now the director of a research team at the CMR Institute of Technology in Bangalore, where he has won the Best Faculty award for three years in a row (2019, 2020, and 2021). His expertise spans a number of disciplines, including Data Science and Machine Learning, Machine Learning Operations (MLOps), cloud computing (AWS Sage Maker / Azure ML), mathematics of Machine Learning & Deep Learning, research and development (R&D), faculty supervision and mentoring, patent filing, and book authorship.

- **Objectives:**

- The main objective of the seminar is to motivate students to take up careers in Mathematics essential to AI and ML.
- The main aim is to ignite young minds towards shaping their career in research in the essential mathematics for AI by learning the necessary concepts of Linear Algebra, Calculus, Probability, and Statistics.
- To provide a platform for students, researchers, and faculty members to exchange and discuss ideas.

  
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- **Program and Speakers**

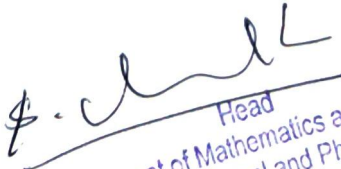
The seminar was planned as an activity from the Department of Mathematics and Statistics, Faculty of Mathematical and Physical Sciences, RTC, Bengaluru. The seminar is one of the series of seminars planned by the department, the main idea is to invite distinguished speakers from reputed Institutions and share their knowledge. A formal committee involving two faculty members was formed to finalize the speaker. The invitation was mailed to the speaker who confirmed his availability through phone. A formal invitation was circulated to all the faculty members across the university on 17-8-2023 through email attaching the abstract of the seminar and invitation. The seminar was planned for all students who are interested in Mathematics, Artificial Intelligence, Machine Learning, and Data Science. We are planning to invite experts to deliver plenary and keynote lectures on recent advances in the field of mathematics and related areas. The participants can establish a research network with the experts, which will benefit their careers.

- **Summary of the Event**

The seminar was organized by Prof. Deepak A. S. and Dr Shankar Narayan S. on behalf of the Department of Mathematics and Statistics, RUAS. The seminar was held at A206 from 11:00 AM to 1:00 PM. The speaker Dr P. Rajendra concentrated on the mathematical aspects of AI. Students from B. Sc. (Hons.), M. Sc., and B. Tech. programmes attended the seminar and reaped the benefits of a comprehensive overview of the mathematical concepts that are fundamental to AI. The seminar was sponsored by the university and it was well supported by our honorable vice chancellor Prof. K. K. Raina, Registrar Prof. G. S. Venkatesh, PVC Research Prof. Govind R Kadambi, and Dean Dr Jagannatharao Venkatarao Desai. Mr Sathyanarayana B., head admin and his team of RTC provided the necessary hospitality services for the speaker and faculty members. The custodian team headed by Mr Deepak and the ICT team headed by Mr Nagaraj supported and helped in the smooth conduction of the event.

- **Conclusion and Outcomes**

- The seminar was well received and appreciated by both faculty members and students.

  
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- Students insisted on conducting more such events which help them in learning new things and getting acquainted with current research in Mathematics essential for AI.
- 19 faculty members and 151 students attended the seminar.
- The question and answer sessions helped students in obtaining more insight into the seminar topic.

• **Photos**



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*1/10/2019*  
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