VIT ®
BHOPAL
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A Five Day International Workshop on

Fairness and Trust in Mathematical Modelling and Machine Learning Techniques

9TH- 13TH OCTOBER
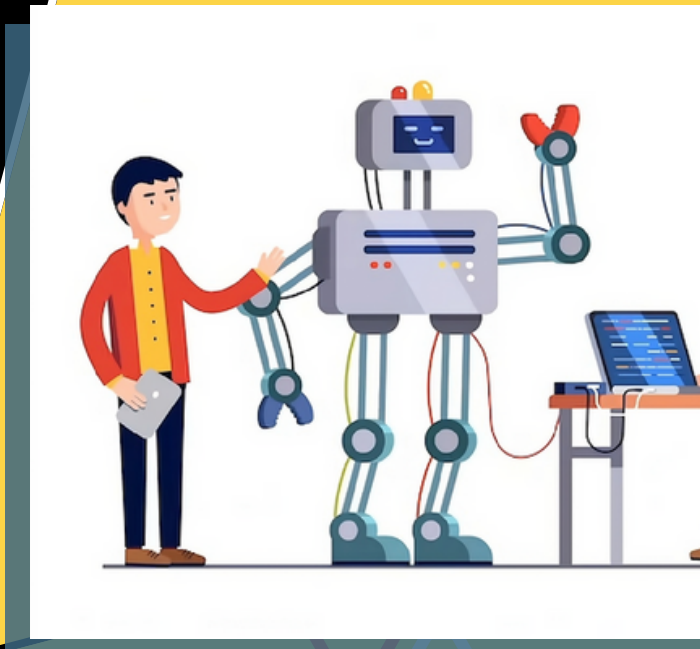
Virtual Mode

Introduction to the workshop

In today's interconnected and data-driven world, the synergistic confluence of mathematical modelling and machine learning has ignited a transformative paradigm shift. These disciplines, often considered the bastions of theoretical abstraction and data-driven innovation respectively, are now weaving a tapestry where precision and ethics converge. As we harness the power of mathematical models to represent complex systems and leverage machine learning techniques to extract patterns from massive datasets, we find ourselves at a crossroads—facing profound questions about fairness, transparency, and the trustworthiness of the intelligent systems we are constructing.

The transformative potential of mathematical models and machine learning is undeniable.
Mathematical modelling provides a formalism that allows us to describe intricate relationships, predict behaviors, and optimize outcomes across diverse domains.

Meanwhile, machine learning techniques—fueled by the deluge of data—enable us to create predictive models, automated decision systems, and adaptive algorithms that refine themselves over time. However, this rapid advancement also raises ethical and societal concerns, particularly in the realms of fairness, accountability, and the potential for algorithmic bias.

Objectives of workshop

- Gain a comprehensive understanding of ethical principles in mathematical modelling and machine learning.

- Explore mathematical foundations for equitable models, learn about integrating fairness-aware algorithms.

- Discover techniques for improving transparency and interpretability in machine learning models.

Participants

The faculty members from Colleges and Universities, Research Scholars and UG / PG students are eligible for this workshop.

Registration fee Details:

Faculty / Delegates	700 ₹
Research Scholars / UG / PG Students	500 ₹
VIT Research Scholars / UG / PG Students	300 ₹
For foreign delegates and students	50 $

Last date of Registration: 2nd Oct, 2023

Account Details

Account Holder: **SASL VIT BHOPAL**

Account No.: **6994648311**

IFSC Code: **IDIB000V143**

Branch Code: **2953**

Bank Name: **Indian Bank**

Swift Code: **IDIBINBBIDR**

Important Dates

Last date for registration: **2nd October 2023**

Confirmation to the participants: **5th October 2023**

Registration Helpline: **+91 83497 80109, +91 79874 20451**

Email: **ftmml@vitbhopal.ac.in**

Registration Link:

https://docs.google.com/forms/d/e/1FAIpQLSd0SDA0zpGDKKQdetoQyrs8qsMV_So_Awh_CRoX8x4Co5fqHw/viewform?usp=sf_link

Certification

Participants will receive a certificate only if they attend all sessions and complete the final assessment.

EMINENT SPEAKERS

Dr. Yeliz Karaca

Senior Researcher and Professor
University of Massachusetts Chan Medical
School (UMass), USA

Dr. Kamal Raj Pardasani

Professor, Department of Mathematics,
Bioinformatics and Computer
Applications, MANIT Bhopal

Dr. Deo Prakash Vidyarthi

Professor, School of Computer and
Systems Sciences, Jawaharlal Nehru
University, New Delhi, India

Dr. Shahnawaz Khan

Head of Applied Research, School of
Information & Communications
Technology Bahrain Polytechnic, Isa
Town, Bahrain

Dr. Vijay Bhaskar Semwal

Assistant Professor, Computer
Science and Engineering
MANIT Bhopal, M.P.

Dr.R.Suresh

Department of Mathematics
University of Technology and Applied
Sciences-Ibri
Sultanate of Oman

About the University

VIT Bhopal University was established in 2017 with a global perspective which is dedicated to make the leaders of future generations. The university is led by Dr. G. Viswanathan, Founder and Chancellor, Mr. Sankar Viswanathan, Vice President, Ms. Kadhambari S. Viswanathan, Assistant Vice President. It has a lush green campus of 260 acres situated at the heart of India, between the two cleanest cities, Indore and Bhopal. Within a short span of time VIT Bhopal University has become one of the best chosen universities by the students for its future ready courses such as B.Tech in Aerospace Engineering, Artificial Intelligence and Machine Learning, Cyber Security and Digital Forensics, Bioengineering etc. VIT global outlook will empower its aspirants to attain excellence through learning. The comprehensive teaching methodology designed by the University i.e. Collaborative and Active Learning Through Technology (CALTech) pedagogy adopted by all 100% doctoral faculty members. It redefines the approach to learning, educating and building knowledge-based societies in the country. Collaboration with reputed national and international organizations and strategic partnerships with universities around the world are being established, to prepare a globally competent generation of professionals. Currently there are 10,000+ students enrolled in more than fifteen programmes from 26 states across India.

Leadership

Dr. G. VISWANATHAN
Chancellor

Mr. SANKAR VISWANATHAN
Vice President

Ms. KADHAMBARI S. VISWANATHAN
Asst. Vice President

Dr. SENTHIL KUMAR ARUMUGAM
Vice-Chancellor (I/C)

Dr. PRADYUMNA YADAV
Registrar

About the School (SASL)

The School of Advanced Sciences and Languages (SASL) in VIT Bhopal principally concerned with blending the best knowledge of Sciences and English with Engineering to align the expertise of our students for the ever changing technological requirements. The school offers numerous core and elective courses, developed in collaboration with international academia and industrial experts, in Mathematics, Chemistry, Physics, and English. The school imparts knowledge by employing student centered teaching approaches via state-of-the-art studio class- rooms equipped with wave 2.0 technology. The school is also involved in the research where researchers and scholars in partnerships with government, industry and nonprofit organizations, develop cutting edge technology and innovations to serve our society.

The research carried out by our faculty members, with diverse research profiles and with industrial and international working experience, ranges from basic areas such as drug design, microbiology, molecular modelling, energy & the environment, materials, catalysis, non linear dynamics, numerical methods, graph theory, space science, astrophysics and computational linguistics to interdisciplinary areas such as biotechnology, Nano electronics, computational biology, machine learning in biology & chemistry, socio-linguistics.

About the School (SCSE)

The School of Computing Science and Engineering at VIT Bhopal University is a dynamic institution dedicated to excellence in computer science and engineering. Offering a diverse range of programs, including Undergraduate, Postgraduate, Integrated Degree, and Doctoral Degree programs in fields like AI/ML, Cyber Security, and Data Science, the school caters to students with varied interests. Equipped with cutting-edge facilities and a world-class faculty, it provides a transformative learning experience. The school's commitment to cutting-edge research is evident through its faculty's active involvement in various domains, such as Artificial Intelligence, Machine Learning, and Software Engineering. They collaborate on research projects, publish in renowned journals, and contribute significantly to their fields.

Emphasizing practical applications and industry partnerships, the school ensures graduates are not only academically prepared but also industry-ready. This approach equips students to excel in the ever-evolving tech industry. The School of Computing Science and Engineering at VIT Bhopal University stands as a beacon of technological advancement, shaping the future of computing and engineering professionals. Overall, it offers a holistic educational experience that combines academic excellence with real-world relevance.

About Bhopal

Bhopal is the capital of Madhya Pradesh and well known worldwide as The City of Lakes. It is well connected to various parts of country by Road, Rail and Air. The University is located at a distance of around 68 km from Bhopal and 125 km from Indore.

Chair

Dr. Hemant Kumar Nashine

Dean, SASL

Chair

Dr. S. Poonkuntran

Dean, SCSE

Organizing secretary

Dr. Mamta Agrawal

Mathematics Division, SASL

Conveners

Dr. Kiran Pandey

CSE Division, SCSE

Dr. Manickam A

Mathematics Division, SASL

Co-Convener

Dr. Harshlata Vishwakarma

SCSE

VIT BHOPAL UNIVERSITY

Bhopal-Indore Highway, Kothrikalan, Sehore, Madhya Pradesh 466 114