Organized by

School of Advanced Sciences and Languages - Mathematics Division
VIT Bhopal University

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3 Days International Workshop on

Optimization Models for Machine Learning and Applications

20th – 22nd July 2023

Hybrid Mode

Sponsored by

MPCST

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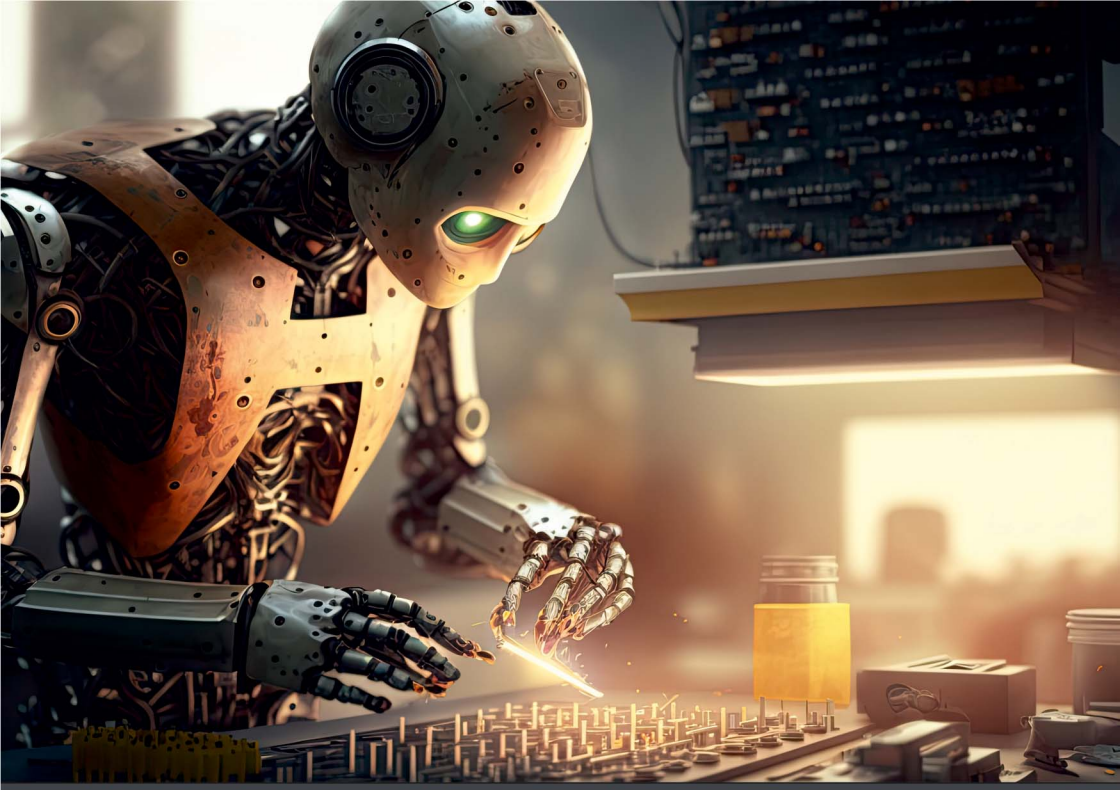
IEEE MP Sub Section



Introduction to the workshop

Machine learning is one of the latest areas of Computer Science that truly depends on mathematical optimization algorithms which lies at the heart of Mathematics. Optimization models play a significant role to handle problem from various domain such as production, transportation, portfolio management and several engineering problems. In this data driven era, where computing plays a central and essential role, emphasizing algorithms, numerical methods and symbolic computation for real world problem, is not possible without the knowledge of mathematics.

The principal goal of machine learning is to create a model that performs well and gives accurate predictions in a particular set of cases. In order to achieve that, we need machine learning optimization. Optimization models are important for machine learning to develop various nature-inspired algorithms for finding the solution of real world problems. Machine learning optimization is the process of adjusting the hyper parameters in order to minimize the cost function by using one of the optimization techniques. Aim of Machine Learning and Models for optimization is to meet the user requirement with high quality of service, least time for computation and high reliability.

Objective of workshop

- To understand the fundamentals of Optimization Techniques relevant to AI & machine learning.
- To Gain insights on the applications of Optimization Techniques in AI & machine learning.
- Implementation of mathematical concepts using real data.
- Explanation of AI & Machine Learning process through Mathematical concepts.

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 Scholar / UG – PG Students	500/-
VIT Research Scholar / UG – PG Students	300/-
For foreign delegates and students	50 USD

Last date of Registration: 15.07.2023

Account Details

Account Holder: **SASL VIT BHOPAL**
Account No.: **6994648311**
IFSC Code: **IDIB000V143**
Branch Code: **2953**
Bank Name: **Indian Bank**
Swift Code: **IDIBINBBMAS**

Important Dates

Last date for registration: **15.07.2023**
Confirmation to the participants: **17.07.2023**

Registration Link:

https://tinyurl.com/ommla2023

Certification

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

Registration Helpline: **07748836973, 09340194353**
Email: **ommla@vitbhopal.ac.in**

Eminent Speakers

Dr Millie Pant
Professor & Head
IIT Roorkee India

Dr Sourish Das
Associate Professor
Chennai Mathematical
Institute, India

Dr Bilal Ali
School of Mathematic & Statistic
Central South University,
Changsha 410083, China

Dr. Vijay Bhaskar Semwal
Asst. Professor, Computer Science,
Maulana Azad National Institute of
Technology (MANIT), Bhopal M.P. India

Dr. Prashant K Srivastava
Associate Professor and Head,
Department of Mathematics
Indian Institute of Technology, Patna

Dr. S. Chakraverty
Professor (Higher
Administrative Grade)
IEEE Senior Member
Dept of Mathematics, NIT, Rourkela

Dr. Hijaz Ahmad
Section of Mathematics,
International Telematic University
Uninettuno, Roma, Italy

Dr. Harish Garg
Associate Professor
School of Mathematics,
Thapar Institute of Engineering
and Technology

Lecture Series

Speaker Name	Topic
Dr Millie Pant	An overview of optimization models
Dr. Sourish Das	Doing data science with Julia
Dr Bilal Ali	Boundary layer and heat transfer analysis of mixed convective nanofluid flow
Dr. Vijay Bhaskar Semwal	Moving toward design of computational model for human gait and walking activity recognition using tinyML
Dr. Prashant K Srivastava	Mathematical modeling: A system's perspective
Dr. S. Chakraverty	Physics informed machine learning models for solving dynamical problems
Dr. Hijaz Ahmad	A fractional calculus approach to the dynamic optimization of biological systems
Dr. Harish Kumar Garg	Fuzzy optimization techniques

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 is 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 faculties. 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

SANKAR VISWANATHAN
Vice President

KADHAMBARI S. VISWANATHAN
Asst Vice President

Dr. SENTHIL KUMAR ARUMUGAM C
Pro-Vice Chancellor

Dr. PRADYUMNA YADAV
Registrar

About the School

The School of Advanced Sciences and Languages (SASL) in VIT Bhopal principally concerned with blending the best knowledge of science and humanities 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, English and Humanities. 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 modeling, 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 etc.

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 institute is located at a distance of around 68 km from Bhopal and 125 km from Indore.

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