MMLA 2019

November 21 to 23, 2019

International Conference on Modeling, Machine Learning and Astronomy

India's First-Ever Conference at the Interface of Machine Learning, Data Science & Astronomy

PES UNIVERSITY

IEEE COMPUTER SOCIETY Bangalore Chapter

Springer

Keynote Speaker

Ashish Mahabal

Caltech and Jet Propulsion Labs

Deep Learning, Methodology Transfer, and Interpretability Challenges

Oleg Malkov

Russian Academy of Sciences

Parameterization of stars & determination of interstellar extinction from multicolor photometry

Important Dates

September 25, 2019
Paper Submission Deadline

October 15, 2019
Notification of Acceptance

October 31, 2019
Camera Ready Copy and Registration

November 21, 2019
Pre-conference tutorial

November 22 & 23, 2019
Conference Date

About

Theory of machine learning, deep learning in particular has been witnessing an implosion lately in deciphering the "black-box approaches". Optimizing deep neural networks is largely thought to be an empirical process, requiring manual tuning of several parameters. Drawing insights in to these parameters gained much attention lately. The conference aims to focus on gaining theoretical insights in the computation and setting of these parameters and solicits original work reflecting the influence of such theoretical framework on experimental results on standard datasets and architectures. The conference aims to garner valuable talking points from optimization studies, another aspect of deep learning architectures and experiments. It is in this spirit, the organizers wish to bridge metaheuristic optimization methods with deep neural networks and solicit papers that focus on exploring alternatives to gradient descent/ascent types methods. Papers with theoretical insights and proofs are particularly sought after, with or without limited experimental validation. We would welcome **cutting-edge research on aspects of deep learning theory used in the fields of artificial intelligence, statistics and data science, theoretical and numerical optimization.**

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Invited Talk

Tarun Deep Saini
IISc

Karthik Gurumoorthy
Amazon

Ajith Parmeswaran
ICTS

Anand Sengupta
IIT Gandhinagar

Suresh Sundaram
IISc

Sriparna Saha
IIT Patna

Najam Hasan
Moulana Azad National
Urdu University

The Conference aims to set a unique ground as an amalgamation of the diverse ideas and techniques while staying true to the baseline. We expect to discuss new developments in modeling, machine learning, design of complex computer experiments and data analytic techniques which can be used in areas beyond astronomical data analysis. Given the horizontal nature of MMLA, we hope to disseminate methods that are area-agnostic but currently of interest to the broad community of science and engineering.

Call for Papers

Accepted and presented papers (12 to 15 pages in the CCIS one-column page format) in MMLA 2019 are granted for publication as Communications in Computer and Information Science (CCIS) proceedings by Springer Nature. CCIS is abstracted/indexed in DBLP, Google Scholar, EI-Compendex, Mathematical Reviews, SCImago, Scopus. CCIS volumes are also submitted for the inclusion in ISI Proceedings.

Topics of Interest

- Exoplanets (discovery, machine classification etc.)
- Unsupervised, semi-supervised, and supervised representation learning
- Representation learning for reinforcement learning
- Metric learning and kernel learning
- Deep learning in astronomy
- MCMC on big data
- Statistical Machine Learning
- Bayesian Methods in Astronomy
- Meta-heuristic and Evolutionary Clustering methods and applications in Astronomy
- Optimization methods
- Swarm intelligence
- Multi-objective optimization
- Dynamical Systems and Complexity
- Information-Theoretic Methods in Life-like Systems
- Predictive Methods for Complex Adaptive Systems and Life-like Systems
- Evolutionary Games

Note to Authors

Proof of concept papers, applied on toy data sets are welcome as long as the theory and models are solid. Papers with applications in some area of Engineering or Science, without theoretical insight would be "desk-rejected". Application in Astronomy is strongly encouraged but the lack of it would not be a reason for rejection. The submission and review process follows (strict) double blind protocol. Manuscripts attempting to reveal author identity in direct or indirect manner will be summarily rejected. At least one of the authors of accepted manuscript needs to register and present during the conference.

Formatting Instructions:

CCIS one-column format

Tracks:

A) Track I: Applied Machine Learning
B) Track II: Astronomy and AstroInformatics
C) Track III: Modeling and Computation

Registration Fee

The registration fee is as follows

Participants
₹ 4000

Authors (Foreign)
$ 200 (Two hundred US Dollar)

Authors (Indian)
₹ 8000 (early bird registration before NOV 5)

Authors (Indian)
₹ 9000

Note: One of the authors have to compulsorily register. Other authors accompanying authors have to register as participants.

About PES University

PES University, located in Bangalore, India is one of the country's leading teaching and research universities. The University is committed to providing "education for the real world" that inspires students to realize their potential. Our students graduate with the ability to adapt to an intellectually and technologically changing environment. Over the years, we have accomplished this with the participative efforts of the management, staff, students and parents.

About CS Department

The programs of the department are designed to create globally competent manpower for the information and communication technology (ICT) industry. The student are also ready for post graduate education in the best universities across the globe. These twin objectives are accomplished by including an optimal mix of fundamental theory subjects and practical, current and industry relevant subjects in the scheme of study. The students will build specialist knowledge in the field of applied computer sciences with the flexibility to follow their interest through the choice of varied optional modules, courses and electives.

GET IN TOUCH

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MMLA 2019

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