

AIMLSystems 2022

The 2nd International Conference on AI-ML Systems

An Initiative of the COMSNETS Association

October 12-15, 2022

The Chancery Pavilion, Residency Road, Bangalore, India | Hybrid Conference

Conference Website: <https://www.aimlsystems.org/2022/>

Paper Submission: <https://cmt3.research.microsoft.com/AIMLSystems2022/>

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CALL FOR PAPERS

AIMLSystems is a new conference targeting research at the intersection of AI/ML techniques and systems engineering. Through this conference we plan to bring out and highlight the natural connections between these two fields and their application to socio-economic systems. Specifically we explore how immense strides in AI/ML techniques are made possible through computational systems research (e.g., improvements in CPU/GPU architectures, data-intensive infrastructure, and communications), how the use of AI/ML can help in the continuous and workload-driven design space exploration of computational systems (e.g., self-tuning databases, learning compiler optimisers, and learnable network systems), and the use of AI/ML in the design of socio-economic systems such as public healthcare, and security. The goal is to bring together these diverse communities and elicit connections between them.

Contributions are invited under Research, Industry & Applications, and Demonstration Tracks of the conference. Authors are encouraged to submit previously unpublished research at the intersection of computational / socio-economic systems and AI/ML.

TOPICS OF INTEREST

1. **Systems for AI/ML:** CPU/GPU architectures for AI/ML; Specialised/Embedded hardware for AI/ML workloads; Data intensive systems for efficient and distributed training; Challenges in production deployment of ML systems; ML programming models, languages, and abstractions; ML compilers and runtime; Efficient systems for data preparation and processing; Systems for visualisation of data, models, and predictions; Testing, debugging, and monitoring of ML applications; Cloud-computing for machine and deep learning; Machine and deep learning “as-a-service”; Efficient model training, optimisation and inference; Tiny Machine Learning; Embedded and Edge Artificial Intelligence; Distributed and parallel learning algorithms; MLOps (data collection, monitoring and re-training)
2. **AI/ML for Systems:** AI/ML for VLSI and architecture design; AI/ML in compiler optimisation; AI/ML in data management - including database optimisations, virtualisation, etc.; AI/ML for networks - design of networks, load modelling, etc.; AI/ML for power management - green computing, power models, etc.; AI/ML for Cloud Computing; AI/ML for IOT networks
3. **AI/ML for Socio-Economic Systems Design:** Computational design and analysis of socio-economic systems; Fair and bias-free systems for social welfare, business platforms; Applications of AI/ML in the design, short-/long-term analysis of cyber-physical systems; Mechanism design for socio-economic systems; Fairness, interpretability and explainability for ML applications; Privacy and security in AI/ML systems; Sustainability in AI/ML systems; Ethics in AI/ML systems; Applications of AI/ML in financial systems

IMPORTANT DATES

- Paper submissions due: **July 5, 2022**
- Author notifications: **August 30, 2022**
- Camera ready deadline: **September 12, 2022**
- Conference dates: **October 12-15, 2022**

STYLE AND AUTHOR INSTRUCTIONS

- Research papers must not exceed 6 pages, including any appendix, with an unlimited number of pages containing only bibliography. Only electronic submissions in PDF format using the ACM sigconf template (see <https://www.acm.org/publications/proceedings-template>) will be considered.
- Papers can be submitted under any of the three main topics listed above. Authors are required to make a primary topic selection, with optional secondary topics for each paper. Number of papers accepted under each topic is not capped. We will accept all papers that meet the high quality and innovation levels required by the AIMLSystems conference. All papers that are accepted will appear in the proceedings.
- All accepted papers will be presented as posters at AIMLSystems 2022, but a select subset of them will be given a “conventional” (oral) presentation slot during the conference. However, all accepted papers will be