

# AIMLSystems 2022

The 2<sup>nd</sup> International Conference on AI-MLSystems

An Initiative of the COMSNETS Association

October 12-15, 2022

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

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

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## CALL FOR PARTICIPATION

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 Authors are encouraged to submit previously unpublished research at the intersection of computational / socio-economic systems and AI/ML.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

## CONFERENCE HIGHLIGHTS

- Keynote/Invited Talks
- Technical Paper Sessions
- Industry Track Session
- Panel Discussions
- Demos & Exhibits
- Doctoral Symposium
- Tutorials

## KEYNOTE SPEAKERS



**Carlos Guestrin**  
Stanford University, USA



**Nikko Strom**  
Amazon, USA



**Cynthia Rudin**  
Duke University, USA



**Partha Pratim Talukdar**  
IISc Bangalore & Google Research,



**Max Welling**  
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IIT Bombay, India



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