AI-DCS 2024: Call for Papers

The 1st IEEE International Workshop on Generative, Incremental, Adversarial, Explainable AI/ML in Distributed Computing Systems July 23-26, 2024 in Jersey City, New Jersey (USA)

Website: https://traffic.comics.unina.it/aidcs2024/

The 1st IEEE International Workshop on Generative, Incremental, Adversarial, Explainable AI/ML in Distributed Computing Systems (AI-DCS 2024) will be held in conjunction with the 44th IEEE International Conference on Distributed Computing Systems (ICDCS) in Jersey City, New Jersey (USA) on July 23-26, 2024.

AI-DCS aims at the investigation of research results and at the systematic discussion of challenges at the intersection of Artificial Intelligence and Machine Learning (AI/ML) with Distributed Computing Systems.

AI-DCS 2024 will include original full-paper presentations and a keynote. The workshop attendees will be stimulated to participate in interesting discussions.

Submission and Important Dates

Submission site: **https://easychair.org/my/conference?conf=aidcs2024**

Paper Submission (extended): ~~April 14th, 2024~~ **April 25th, 2024 (firm)**

Acceptance Notification: **May 5th, 2024**

Camera-ready Papers: **May 10th, 2024**

Topics of Interest

Authors are invited to submit papers that fall into or are related to one or multiple topic areas listed below:

Generative AI/ML Models in Distributed Systems

- Generative AI for efficient management and monitoring of network resources
- Automatic network configuration with Generative AI
- Generative AI for Traffic Engineering

- Generative AI for improving network security
- Prompt Engineering for using Large Language Models (LLMs) in distributed systems
- Strategies for training generative models across distributed nodes
- Efficient deployment of generative models in distributed environments
- Load balancing for generative model inference
- Automatic generation of diverse datasets in distributed environments (e.g., industrial IoT, mobile, vehicular, cloud computing, and edge computing)

Incremental Learning in Distributed Systems

- AI/ML for handling dynamic data sources and network conditions
- Federated transfer-learning
- Adapting pre-trained models to distributed environments via transfer-learning
- Knowledge transfer between IoT devices
- Training meta-learning models in distributed environments
- Implementation of continuous learning algorithms in a decentralized fashion
- Edge-to-cloud communication for model updates
- Resource-efficient continual learning in IoT and edge devices

Adversarial Learning in Distributed Systems

- Adversarial threats in federated learning setups
- Privacy-preserving training strategies in distributed adversarial environments
- Secure AI/ML model deployment in distributed systems
- Adversarial defense mechanisms in distributed environments
- Trade-offs between security and model performance in decentralized systems
- Threat models for distributed applications based on AI/ML

Explainable AI in Distributed Systems

- Fairness, accountability, and transparency in AI/ML for networking
- Explainable AI techniques for distributed models
- Reliability of AI/ML methods in critical distributed applications
- Explainable machine learning models for network performance optimization
- Interpretability in AI/ML-based network traffic analysis and management tools
- Evaluation methods for explainable AI/ML in distributed systems
- Human-in-the-loop distributed systems

General

- AI/ML and its applications in distributed systems
- AI/ML and its applications to industrial IoT systems
- AI/ML and its applications to cloud and edge computing
- AI/ML and its applications to blockchain
- AI/ML and its applications for securing Distributed Computing Systems
- AI/ML for network anomaly and misuse detection
- ML and DL approaches for network traffic analysis and management

Submission Guidelines

Authors are required to submit fully formatted, original papers (in PDF format). All workshop papers are limited to **no more than 6 pages**, including references, in the IEEE format aligned with the IEEE ICDCS 2024 main conference guidelines (https://icdcs2024.icdcs.org/call-for-papers/). Each submission must be written in English, accompanied by a **75 to 200 words abstract** that clearly outlines the scope and contributions of the paper.

The submission site is: https://easychair.org/my/conference?conf=aidcs2024.

Accepted and presented papers will be published in the **ICDCS Workshops proceedings** and submitted to **IEEE Xplore** as well as other Abstracting and Indexing (A&I) databases. IEEE reserves the right to exclude a paper from distribution after the conference, including IEEE Xplore® Digital Library if the paper is not presented by the author at the conference.

Keynotes

- Ken Huang, CISSP, USA (ken.huang@distributedapps.ai), *"A Framework for Multi-Agent Distributed Retrieval Augmented Generation Systems"*

General Chairs

- **Yuval Shavitt**, School of Electrical Engineering Tel-Aviv University, Israel (shavitt@eng.tau.ac.il)
- **Antonio Pescapè**, University of Napoli Federico II, Italy (pescape@unina.it)
- **Tal Shapira**, The Hebrew University of Jerusalem, Israel (talshapirala@gmail.com)
- **Antonio Montieri**, University of Napoli Federico II, Italy (antonio.montieri@unina.it)

Publicity Chair

- Elizabeth Liri, Saint Louis University, USA (elizabeth.liri@email.ucr.edu)

Web Chair

- Giampaolo Bovenzi, University of Napoli Federico II, Italy (giampaolo.bovenzi@unina.it)

Technical Program Committee (TBD)

- Anat Bremler-Barr, Tel-Aviv University, Israel
- Walter Cerroni, Università di Bologna, Italy
- Haiming Chen, Chinese Academy of Sciences, China
- Tomáš Čejka, Faculty of Information Technology CTU in Prague, Czech Republic
- Domenico Ciuonzo, Università di Napoli Federico II, Italy
- Claudio Fiandrino, IMDEA Networks Institute, Spain
- Danilo Giordano, Politecnico di Torino, Italy

- David Hay, The Hebrew University of Jerusalem, Israel
- Noam Koenigstein, Tel-Aviv University, Israel
- Jonatan Krolikowski, Huawei Technologies, France
- Catalin Meirosu, Ericsson, Sweden
- Marco Mellia, Politecnico di Torino, Italy
- Pham Tran Anh Quang, Huawei Technologies, France
- Solange Rito Lima, University of Minho, Portugal
- Kamal Singh, Telecom Saint Etienne, France
- Giancarlo Sperlì, Università di Napoli Federico II, Italy
- José Suárez-Varela, Telefonica Research, Spain
- Noa Zilberman, University of Oxford, United Kingdom

Note: if interested in being part of the TPC, please contact workshop organizers.