Sustainable Communications for Renaissance

Call for Papers

Workshop on Scalable and Trustworthy AI for 6G Wireless Networks (6GSTRAIN)

SCOPE

To design and deploy artificial intelligence (AI)-enabled sixth-generation (6G) zero-touch automated wireless networks, scalability, trust and explainability of AI algorithms are required. Recent advances in standardization point out to fully decentralized AI as the way to deploy large scale network automation. In ETSI's zero-touch architecture, for instance, each network domain is endowed with a data collection element that feeds a local AI analytics and decision entity. The central entity plays only the role of a coordinator/model aggregator without necessarily having access to the distributed raw data. Nonetheless automatically managing a massive number of network elements by only increasing the processing resources is not a guarantee for scalability since it also increases the complexity of their management, the degree of contention in the system, as well as suffers from the lack of collaboration between the distributed decision entities. A scalable architecture would therefore achieve a trade-off in i) utilization of shared resources to minimise contention but also to avoid complex management of unnecessary resources; ii) information flow by sharing only compressed parameters instead of raw data and iii) degree of collaboration by enabling the exchange of inferences between decentralized analytics/decision engines while avoiding that they fall in competitive or too cooperative situations. On the other hand, the practical deployment of AI automation in 6G requires the establishment of a high level of trust and transparence in the AI black boxes. In this regard, explainable AI (XAI) tools and metrics will play a pivotal role in unveiling the rationale behind AI predictions and decisions. From the state-of-the-art gradient-based attribution methods such as Integrated Gradients, Saliency Maps and ε-LRP---to perturbation-based attribution methods such as Shapley Value sampling, the XAI framework enables a better understanding of the causality in AI models.

TOPICS OF INTEREST

We seek original completed and unpublished work not currently under review by any other journal/ magazine/conference. Topics of interest include, but are not limited to:

- Federated learning for scalable 6G networks.
- Decentralized reinforcement learning for scalable 6G networks.
- XAI for trustworthy AI in 6G networks.
- Zero-touch network architectures and protocol design for decentralized AI.
- Decentralized AI schemes with low energy consumption.
- Semantic communications for 6G scalability.
- Distributed Data and knowledge distillation for 6G.
- Wireless communications for AI operation.
- Decentralized resource management and network slicing.
- Decentralized AI for low latency applications.
- Decentralized AI for PHY/MAC operation.
- Decentralized AI and Blockchain for 6G.
- Decentralized AI integration in 6G PoCs.
- Production platforms for decentralized and federated learning.
- New business models for XAI.

PAPER SUBMISSION

All papers for Workshops should be submitted via EDAS.
Full instructions on how to submit papers are provided on the IEEE ICC 2023 website: https://icc2023.ieee-icc.org/

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IMPORTANT DATES
Paper Submission Deadline:
20 January 2023
Paper Acceptance Notification:
6 March 2023
Camera Ready and Registration for accepted papers:
15 March 2023

WEBPAGE LINK
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