

Artificial Intelligence for Future Sensor Networks (AI4FSN)

Research has been influenced in large-scale networking systems and will continue to be driven by particular application features and the underlying frameworks and infrastructures. At the one side, technologies are that at an increasing speed, which in terms of width and complexity is inherently unpredictable. Likewise, the underlying networking was the subject of a huge transformation made possible by new models arising from virtualization and cloud computing. This has resulted in a plenty of innovative research model and architecture enabled by upcoming future technologies, including Software-Defined Networking (SDN), Video on Demand, Cognitive technology, Network Function Virtualization (NFV), and more recently, edge cloud and fog networking.

In the future, advanced sensing devices and smart transducers can play a critical role in human behaviour. However, a number of perspectives and open research problems, such as transducer creation, signal processing, structured communication protocols, security, architecture, technology, reliability, maintenance, accuracy, and management, must be investigated. The role of research and development is to improve the efficiency and features of sensing systems by addressing issues such as green communication, reliability assurance, high accuracy, and system maintenance.

The way we approach networking today is improved by artificial intelligence and machine learning (AI & ML) techniques for network management, processes, and automation. AI & ML techniques deliver significant advantages in networking systems when compared with carefully manually crafted strategies. AI technologies are gradually finding their way into daily routine - real time traffic data and management, future of self-driven model, cable and television networks, OTT entertainment and its recommendations. All these wireless network applications produce significant data volumes which need to be collected and processed in real time.

Potential Topics:

- AI & ML algorithms for network scheduling and control
- AI & ML based Computer Vision in Wireless Networks
- AI & ML based ultra low power sensors
- Big-data intelligent analytic frameworks for networking data
- Clustering and classification algorithms for sensor networks
- Cognitive Radio Sensor Networks
- Deep and reinforcement learning for sensor networks
- Distributed intelligent multi-agent systems for network control
- Resource allocation for shared/virtualized networks using machine learning
- Security, Privacy and Trust in mobile networking
- Self-learning network architecture and systems
- Sensors and hardware for sensor networks
- Wearable sensors

Special Session Chairs:

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