Call for Papers

Cognitive Radio and AI-enabled Networks Symposium

Symposium chairs

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Scope and Topics of Interest

Emerging cognitive radio and artificial intelligence (AI)-enabled networking technologies potentially provide a promising solution to efficient spectrum utilization and resource allocation in wireless access, improving the interoperability and coexistence among different wireless/mobile communications systems and making the future generation radio devices/systems autonomous and self-reconfigurable. The ultimate goal of AI-enabled radio and networks is to make the communication network self-adaptive, self-managed, and truly cognitive. The aim of this symposium is to bring together and disseminate state-of-the-art research contributions that address various aspects of analysis, design, optimization, implementation and standardization, and applications of AI-enabled radio and networking technologies. The scope of this symposium includes (but is not limited to) the topics below.

- AI-assisted spectrum access
- AI-enabled cognitive medium access control, interference management and modelling
- AI-enabled distributed cooperative spectrum sensing and multi-user access
- AI-enabled resource allocation in cognitive radio and networks
- AI-enabled spectrum sensing, sharing and access
- Applications and services (e.g., cognitive networking in TV whitespace, adaptation with LTE networks such as LTE unlicensed, and integration with other merging techniques such as massive MIMO and full duplex)
- Architectures and building blocks of AI-enabled radio and networks
- Architecture and implementation of database-based cognitive radio networks
- Attack modelling, prevention, mitigation, and defence in cognitive radio systems
- Challenges and issues in designing AI-enabled radio communications
- Challenges and issues in designing AI-enabled wireless networks

- o Cognitive radio and AI-enabled network standards, testbeds, simulation tools, and hardware prototypes
- o Deep learning techniques for cognitive radio and networks
- o Distributed adaptation and optimization in cognitive radio and networks
- o Economic aspects of spectrum sharing
- o Energy-efficient cognitive radio communications and networking
- o Handoff and routing protocols for AI-enabled radio and networks
- o Machine learning-based resource allocation for wireless networks
- o Machine learning techniques for cognitive radio and networks
- o Modelling and performance evaluation for AI-enabled radio and networks
- o Physical-layer security in cognitive radio networks
- o Privacy and security of cognitive radio and spectrum sharing
- o Quality of service provisioning in AI-enabled radio and networks
- o Regulatory policies and their interactions with communications and networking
- o Reinforcement learning and deep learning for cognitive radio and networks
- o Self-configuration, interoperability and co-existence issues
- o Spectrum measurements and statistical modelling and learning of spectrum usage
- o Spectrum sensing, learning, sharing, and access for Internet of Things
- o Spectrum sensing, learning, sharing, and access for millimetre-wave (mmWave) systems
- o Spectrum sensing, learning, sharing, and access for terahertz systems
- o Spectrum sensing, spectrum sharing, and spectrum learning and prediction
- o Waveform design, modulation, and interference aggregation for cognitive radio and AI-enabled networks

Submission Guidelines

The IEEE ICC 2020 website (icc2020.ieee-icc.org) provides full instructions on manuscript format and how to submit a manuscript. You will select the desired symposium/track when submitting your manuscript.