



IEEE Global Communications Conference

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Connecting Cultures around the Globe

Cognitive Radio and AI-Enabled Networks Symposium

SYMPOSIUM CO-CHAIRS:

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SCOPE AND MOTIVATION:

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.

TOPICS OF INTEREST:

The Cognitive Radio and AI-Enabled Networks Symposium seeks original contributions in, but not limited to, the following areas:

- Challenges and issues in designing AI-enabled radio communications
- Challenges and issues in designing AI-enabled wireless networks
- Architectures and building blocks of AI-enabled radio and networks
- Spectrum sensing, spectrum sharing, and spectrum learning and prediction
- Spectrum measurements and statistical modeling and learning of spectrum usage
- AI-enabled distributed cooperative spectrum sensing and multi-user access
- AI-enabled cognitive medium access control, interference management and modeling
- AI-enabled spectrum sensing, sharing and access
- AI-enabled resource allocation in cognitive radio and networks
- Energy-efficient cognitive radio communications and networking
- Self-configuration, interoperability and co-existence issues
- Machine learning techniques for cognitive radio and networks
- Deep learning techniques for cognitive radio and networks

- Reinforcement learning and transfer learning for cognitive radio and networks
- Waveform design, modulation, and interference aggregation for cognitive radio and AI-enabled networks
- Architecture and implementation of database-based cognitive radio networks
- Distributed adaptation and optimization in cognitive radio and networks
- Handoff and routing protocols for AI-enabled radio and networks
- Economic aspects of spectrum sharing
- Regulatory policies and their interactions with communications and networking
- Privacy and security of cognitive radio and spectrum sharing
- Attack modeling, prevention, mitigation, and defense in cognitive radio systems
- Physical-layer security in cognitive radio networks
- Modeling and performance evaluation for AI-enabled radio and networks
- Quality of service provisioning in AI-enabled radio and networks
- Spectrum sensing, learning, sharing, and access for Internet of Things
- Spectrum sensing, learning, sharing, and access for millimeter-wave (mmWave) systems
- Spectrum sensing, learning, sharing, and access for terahertz systems
- Applications and services (e.g., cognitive networking in TV whitespace, adaptation with LTE networks such as LTE unlicensed, and integration with other emerging techniques such as massive MIMO, NOMA, intelligent reflecting surface, and full-duplex)
- Cognitive radio and AI-enabled network standards, testbeds, simulation tools, and hardware prototypes.

IMPORTANT DATES:

Deadline for paper submission: 15 April 2021

Date for notification: 25 July 2021

Deadline for final paper submission: 1 September 2021