



Call for Papers for *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
- 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 cognitive medium access control, interference management, resource allocation
- Energy-efficient cognitive radio communications and networking
- Self-configuration, interoperability and co-existence issues
- Waveform design, modulation, and interference aggregation for cognitive radio and AI-enabled networks

- 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
- 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 millimeter-wave (mmWave) and 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: 11 October 2021

Date for notification: 18 January 2022

Deadline for final paper submission: 15 February 2022