



IEEE Global Communications Conference

9-13 December 2019 • Big Island, Hawaii, USA

Revolutionizing Communications

CALL FOR PAPERS AND PROPOSALS

Cognitive Radio and AI-Enabled Networks Symposium

SYMPOSIUM CO-CHAIRS:

Daniel Benevides da Costa, Federal University of Ceará, Brazil

Carlos Faouzi Bader, CentraleSupélec, France

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.

MAIN 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 for cognitive radio and networks
- Waveform design, modulation, and interference aggregation for cognitive radio and AI-enabled networks



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- 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 merging techniques such as massive MIMO and full-duplex)
- Cognitive radio and AI-enabled network standards, testbeds, simulation tools, and hardware prototypes.

NOTE:

The authors of selected papers from this symposium will be invited to submit an extended version of their work for fast-track review and possible publication in IEEE Transactions on Cognitive Communications and Networking.

SUBMISSION LINK:

<https://edas.info/N25074>

IMPORTANT DATES:

Paper Submission: 15 April 2019

Acceptance Notification: 15 July 2019

Camera-Ready: 16 August 2019