



IEEE ICC, 01 July 2020

IEEE ComSoc Technical Committee on Cognitive Networks (TCCN)

Chair: Yue Gao

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University of Surrey, UK

Attendance Register



- Please email me (yue.gao@surrey.ac.uk) your name and affiliation during this meeting period as the proof of attendance.
- **Emails received after the meeting will NOT be counted.**

Officers (2019-2020)



- **Chair**

- Yue Gao, University of Surrey, UK

- **Vice-Chairs**

- Oliver Holland, Advanced Wireless Technology Group, Ltd. (Europe/Africa)
- Lingyang Song, Peking University (Asia Pacific)
- Daniel Benevides da Costa, Federal University of Ceará, Brazil (Americas)

- **Secretary**

- Lin Gao, Harbin Institute of Technology, Shenzhen, China

Agenda



- **Welcome and Introduction**
- **Attendance Register**
- **Approval of the Agenda**
- **Approval of the GLOBECOM 2019 (12/2019) TCCN meeting minutes**
- **Reports on Special Interest Groups (SIGs)**
 - SIG on Energy-harvesting Cognitive Radio Networks, by Daniel B. da Costa, Federal University of Ceará (UFC), Brazil
 - SIG on Data-Driven Cognitive Networks, by Yong Li, Tsinghua University, China
 - SIG on Social Behaviour Driven Cognitive Radio Networks, by Li Wang, Beijing University of Post and Telecommunications, China
 - SIG on AI Embedded Cognitive Networks, by Kai Yang, Tongji University, China
 - SIG on Cognitive Network Security, by K.P. (Suba) Subbalakshmi, Stevens Institute of Technology, USA

Agenda (Cont.)

- **Reports on conferences**
 - GLOBECOM 2020 Cognitive Radio and AI-Enabled Networks Symposium, by Julian Cheng, The University of British Columbia, Canada or Zhijin Qin, Queen Mary University of London, UK
- **Reports on publications**
 - Transactions on Cognitive Communications and Networking, by Ying-Chang Liang, University of Electronic Science and Technology of China
 - TCCN Newsletter, by Daniel B. da Costa, Federal University of Ceará, Brazil
- **TCCN publicity**
 - Report on website, by Vijay Rao, Delft University of Technology, the Netherlands (Presented by Yuan Ma)
 - LinkedIn and Facebook, by Yuan Ma, Shenzhen University, China
- **Next TCCN Meeting**
- **Any other business**

TCCN Scope



- TCCN) is to provide a **platform** for its members in particular, and the cognitive and artificial intelligence (AI) enabled networking research, development, policy making and standardization community in general, to interact and exchange technical ideas to identify major challenges and also drive solutions in the development of AI-enabled networking technologies.
- The **technical issues** addressed by the committee will include spectrum agile/dynamic spectrum access networks, related issues from PHY to application layers, security and privacy issues, policy issues (e.g., spectrum policy reform by U.S., Canada and European Union), implementation technologies (e.g., embedded AI, software radio, middleware), economic considerations and standardization activities.
- Cognitive networks, especially **AI-enabled radio and networks** are touted to drive the next generations of digital communications. This technical area is attracting a tremendous amount of interest from academia, university, industry and government. New IEEE standardization activities, FCC's spectrum policy reform, federally funded research programs (e.g., DARPA XG and NSF NeTS ProWiN) are some examples of major activities supporting R&D in cognitive and AI-enabled networks.

TCCN Awards



- **TCCN has two awards**
- **IEEE ComSoc TCCN Recognition Award**
 - The recognition award is given to (up to) one individual who is deemed to have made significant and sustained contributions to cognitive network community. The intent is to recognize contributions over a period of time via any of the following modalities including combinations thereof:
 - **Scholarly excellence** in cognitive network research as evidenced by publications, patents and hardware/software prototypes;
 - Technical or scholarly leadership as evidenced by contributions to standards, patents, leading research, and/or significant project management;
 - Meritorious service to the cognitive network community inclusive of IEEE ComSoc, industry and government policy.
- **IEEE ComSoc TCCN Publication Award**
 - The recognition award is given to (up to) one individual or group who are deemed to have made outstanding technical contributions to TCCN. The basis of judgment will be archival, peer-reviewed publications in ComSoc conferences and journals over any period prior to the award year.

TCCN Special Interest Groups (SIGs)

- **What is a SIG?**
 - SIGs are mini-TC, representing the hot and emerging research areas in the general field of cognitive networks
- **What does a SIG do?**
 - Attract submissions to CRN symposium at ICC and GLOBECOM
 - Organize journal special issues for TCCN and others
 - Organize workshops and conferences
 - Organize other related technical activities (conference call, blogs, etc.)
- **Who are in a SIG?**
 - Leadership team: a Chair, one or more Vice-Chairs, one or more advisors
 - 10+ key members
 - Considering geographical and academia/industry balance
- **How to establish a SIG?**
 - Fill in the form with the proposed SIG team and activities <http://cn.committees.comsoc.org/special-interest-groups-sigs/application-for-special-interest-groups/>
 - Send to TC Chair
 - Usually go through 1-2 rounds of feedback before official approval

Current Status of TCCN SIGs



- **Cognitive Network Security SIG**
- **SIG on Cognitive Radio for 5G**
- **SIG on Data-Driven Cognitive Networks (DDCN)**
- **SIG on AI Embedded Cognitive Networks (AICN)**
- **SIG on Social Behaviour Driven Cognitive Radio Networks**
- **SIG on Cognitive Communications and Networking in Cyber-Physical Systems (CCNCPS)**
- **SIG on Energy-harvesting Cognitive Radio Networks**

TCCN Nominations



- **ICC/GC Symposium Chairs**
- **ComSoc Distinguished Lecturers: 4 Nominations, 2 granted (2019)**
- **IEEE Fellows**

ICC/GC Symposium Chair Nominations



- **TCCN supports “Cognitive Radio and AI-enabled Networks Symposium” in ICC/GC**
- **Open call-for-nominations from TCCN members**
- **Decisions voted by TCCN Officers (avoiding Col)**
- **Selection criterions**
 - Research record
 - Service record
 - **Service record to TCCN: SIG, Newsletter, Standardization, Publicity, Conference, Journal**

ComSoc Distinguished Lecturers (DLs) Nominations

- **TCCN nominates up to 4 ComSoc Distinguished Lecturers every September**
- **Open call-for-nominations from TCCN members**
- **Decisions voted by TCCN Officers (avoiding Col)**
- **Selection criterions**
 - Research record
 - Public speaking record
 - **Service record to TCCN: SIG, Newsletter, Standardization, Publicity, Conference, Journal**
- **DLs can also be nominated by individual IEEE Senior Members**

IEEE Fellow Endorsements



- **TCCN can endorse IEEE Fellow nominations**
- **Typically done by the TCCN Chair**
 - With consultations with other officers if necessary
- **Focusing on both the technical and service contributions to TCCN**

How to Get Involved in TCCN



- **Many ways of getting involved**

- Organize Special Interest Groups (SIGs) (contact: Yue Gao, Vijay Rao)
- Organize special issues for the TCCN Newsletter (contact: Daniel Benevides da Costa)
- Participate in TCCN related standardization efforts (contact: Oliver Holland)
- Contribute to the publicity efforts of TCCN (contact: Lin Gao, Yuan Ma)
- Contribute to student competition program (contact: Lucio Marcenaro, Sai Huang)
- Involve TCCN in ComSoc conference organization (contract: Lingyang Song)
- Involve TCCN in ComSoc journal special issues (contact: Yue Gao)

- **TC will reward excellent volunteers through various nominations and endorsements**

Open Challenges



- **How can we support our research activity at the Covid-19 pandemic?**
- **How can we help our research community in the future?**