IEEE Communications Society Technical Committee on Signal Processing & Computing for Communications Technical Committee (SPCC)

NEWSLETTER

Issue 11 – June 2022

Dear colleagues from IEEE ComSoc Signal Processing and Computing for Communications Technical Committee,

Welcome to the eleventh issue of the SPCC Technical Committee Newsletter. This newsletter is conceived as a way to share all the relevant information for the members of the technical committee and to have some brief contact approximately every six months. Our aim is that it can be a useful communication tool, open for everybody to contribute.

Please feel free to send us any piece of news that you believe can be of interest for our community.

Kindest regards,

Roberto Corvaja   roberto.corvaja@unipd.it
SPCC TC Newsletter Editor

Message from the Chair

Dear SPCC Members,

We would like to thank you all for being part of the SPCC community, and for your dedicated contribution to its technical activities.

We are happy to report the exciting activities which our technical committee is involved in, from supporting various conferences in our areas, to organizing journal special issues and special sessions at conferences. We hope to further increase the number and types of activities, and for that we rely on your support. Please contact us with any ideas about new activities.

Please stay healthy and safe. We are looking forward to seeing you again at future in-person SPCC TC meetings at ICC and GLOBECOM.

Best regards,

Jingxian Wu

Contact information

The current officers of the SPCC TC between 2022 and 2023 are:

Chair:
Jingxian Wu
University of Arkansas, USA

Vice Chair:
Ana Garcia Armada
University Carlos III of Madrid, Spain
Secretary:
Yuanwei Liu
Queen Mary University of London, UK

SIG Coordinator:
Fang Fang
Durham University, UK

Standards Liaison:
Richie Leo
ZTE Corporation, China

Student Competition Representative:
Rui Dinis
University Nova Lisboa, Portugal

Newsletter Editor:
Roberto Corvaja
University of Padova, Italy

Please refer to our web page for further information:
http://spcc.committees.comsoc.org/officers/

The SPCC Technical Committee reports to the Technical Committees Board. Operation of the SPCC Technical Committee and coordination among TC members will be managed by the elected officers, i.e. TC Chair, TC Vice Chair and TC Secretary. Each term of elected Technical Committee officers is two years.

How to join SPCC Technical Committee and mailing list

Membership on the IEEE SPCC TC is open to all members of the IEEE Communications Society who share an interest in signal processing & computing for communications.

To join the SPCC, you simply subscribe to the SPCC mailing list by using the following link:

https://comsoc-listserv.ieee.org/cgi-bin/wa?SUBED1=spce&A=1

Committee meetings

- The SPCC GLOBECOM 2021 Minutes, held by videoconference on November 17, 2021, are available at

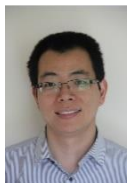 https://spcc.committees.comsoc.org/meeting-reports/globecom-21/

- Last SPCC TC meeting was held online, on May 5, 2022 with the following agenda:
    - Welcome & Introduction
    - Approval of Meeting Minutes from Nov. 17, 2021
    - SPCC Scope, Objectives and Organization Structure
    - Technical Program Committee Reports
    - SIG Activity Reports/New SIG Presentation
    - Student/Standard Activities
    - Newsletter

- SPCC Awards Announcement
- Other Business

Committee awards

Nominations will be solicited by e-mail from the SPCC members and the SPCC Award Selection Committee will be responsible for the award selection process. The following awards are granted on a yearly basis by the SPCC TC:

IEEE SPCC Technical Recognition Award

The award recognizes members of the IEEE Communications Society for giving outstanding contributions to the area of signal processing for communications. The Technical Recognition Award Committee consists of the second past chair, the first past chair, the current chair and other two SPCC members nominated by the Committee Chair.

The recipient of the SPCC Technical Recognition Award 2021 is Prof**.** Zhiguo Ding, University of Manchester, UK.

IEEE SPCC Best Paper Award

The award recognizes members of the IEEE Communications Society who have made outstanding contributions of one paper in the technical areas that are of interests to SPCC. It applies to papers published in SPCC-sponsored conferences during the past year, in which no less than half of the co-authors are SPCC members

The SPCC Best Paper 2021 has been awarded to

J. S. Ng, W. Y. B. Lim, S. Garg, Zehui Xiong, D. Niyato, M. Guizani, and C. Leung, "Collaborative coded computation offloading: An all-pay auction approach," Proceedings of IEEE International Conference on Communications (ICC), Montreal, Canada, June 2021.

IEEE SPCC Early Achievement Award

The award recognizes members of the IEEE Communications Society who have achieved early career visibility through research and service to the SPCC community within 10 years since the award of their last degree.

The recipient of the SPCC Early Achievement Award 2021 is Professor Prof. Zhijin Qin, Queen Mary University of London, UK.

Please find additional information here:
http://spcc.committees.comsoc.org/awards/awards-by-laws-procedures/
and the list of past recipients:
http://spcc.committees.comsoc.org/awards/

Conferences

TPC Reports on flagship conferences

GLOBECOM 2021

IEEE GLOBECOM has been held in Madrid, Spain, in-person and virtual hybrid, on December 7-11, 2021, with General Chair Prof. Ana Garcia Armada, Universidad Carlos III de Madrid, Spain and TPC Chair Prof. Rui Dinis, Instituto de Telecomunicações, FCT, Portugal.

https://globecom2021.ieee-globecom.org/

SPCC nominated the Following Symposium Co-Chairs

- Zhijin Qin (Signal Processing for Communications)

- Cong Shen (Wireless Communications)

- Kamel Tourki (SAC: Machine Learning for Communications)

For the Signal Processing for Communications (SPC) symposium at GLOBECOM 2021, 127 paper have been submitted and have been reviewed by 110 TPC members. The number of accepted papers was 52, with 40.9% acceptance rate.

For the Wireless Communications (WC) symposium, 264 papers have been submitted and have been reviewed by 238 TPC members. The number of accepted papers was 80 with 30.3% acceptance rate.

For the Selected Areas in Communication (SAC) symposium: Machine Learning for Communications track, 187 papers have been submitted and have been reviewed by 143 TPC members. The number of accepted papers was 73 with 39% acceptance rate.

ICC 2022

IEEE ICC has been held in Seoul, South Korea, on May 16 - 20, 2022, in-person and virtual hybrid, with General Chair Dong In Kim, Sungkyunkwan University, Korea, and TPC Chair Prof. Ekram Hossain, University of Manitoba, Canada.

https://icc2022.ieee-icc.org/

SPCC sponsored this conference and appointed the following representatives:

- Nan Yang, (Australian National University), Signal Processing for Communications Symposium
- Sinem Coleri, (Koc University, Turkey), Wireless Communications Symposium
- Liang Xiao (Xiamen University, China), Communication & Information System Security Symposium

For the Signal Processing for Communications (SPC) symposium at ICC 2022, 149 paper have been submitted and have been reviewed by 174 TPC members. The number of accepted papers was 59, with 39.6% acceptance rate.

For the Wireless Communications (WC) symposium, 324 papers have been submitted and have been reviewed by 332 TPC members. The number of accepted papers was 123 with 37.3% acceptance rate.

For the Communication & Information System Security symposium, 252 papers have been submitted and have been reviewed by 159 TPC members. The number of accepted papers was 93 with 36.9% acceptance rate.

Forthcoming flagship conferences

GLOBECOM 2022

Next IEEE GLOBECOM will be held in Rio de Janeiro, Brazil, December 4 - 8, 2022.

https://globecom2022.ieee-globecom.org/

SPCC sponsors this conference and appointed the following representatives:

- Nan Zhao (Dalian University of Technology, China), Signal Processing for Communications Symposium
- Sami Mihaidat (Khalifa University, UAE), Wireless Communication Symposium

For the Signal Processing for Communications (SPC) symposium at GLOBECOM 2022, together with the SPCC TC representative, the Co-Chairs are:

- Yongming Huang (Southeast University)
- Claudio Sacchi (University of Trento)

For the Wireless Communication Symposium (WCS) at GLOBECOM 2022, together with the SPCC TC representative, the Co-Chairs are:

- Melike Erol-Kant (University of Ottawa, Canada)
- Haixia Zhang (Shandong University, China)
- Theodoros Tsiftsis (Jinan University, China)
- Haibo Zhou (Nanjing University, China)

The number of active submissions is 115 and the review process has not yet started.

ICC 2023

Next IEEE ICC will be held in Rome, Italy on May 28 – June 1, 2023

SPCC sponsors this conference and nominated the following Symposium Co-Chairs:

- Junqing Zhang (University of Liverpool, UK): Signal Processing for Communications Symposium

- Mingyue Ji (University of Utah, USA): Wireless Communications Symposium

- Arsenia Chorti (ENSEA, France): Wireless Communications Symposium

GLOBECOM 2023

Next IEEE GLOBECOM will be held in Kuala Lumpur, Malaysia on December 2023.

SPCC sponsors this conference and nominated the following Symposium Co-Chairs:

- Lingjia Liu (Virginia Tech, USA) Signal Processing for Communications Symposium

- Fang Fang (Durham University, UK), Signal Processing for Communications Symposium

- Yuanwei Liu (Queen Mary University of London, UK), Communication Theory Symposium

Other related conferences/special issues

SPCC sponsors the following conferences:

- 2022 IEEE 2nd International Conference on Information Communication and Software Engineering (ICICSE), March 2022, Chongqing, China http://www.icse.org/committee.html

SPCC representatives:

- Xianbin Wang, Western University, Canada
- Hai Lin, Osaka Prefecture University, Japan
- Jingxian Wu, University of Arkansas, USA
- Jun Zheng, Southeast University, China

- CommNet 2022, December 12-14, 2022, Hybrid In-person/Virtual Conference
  http://www.commnet-conf.org/

SPCC representatives:

- George K. Karagiannidis, Aristotle University of Thessaloniki, Greece
- Mohamed-Slim Alouini, KAUST, Kingdom of Saudi Arabia
- Faissal El Bouanani, Mohammed V University, Morocco

Special Interest Groups

More information about the SIGs may be found in our web page:
http://spcc.committees.comsoc.org/special-interest-groups/

SIG on Signal Processing Techniques in 5G Communication Systems

The SIG has the following activities:

Journal Special Issues

- IEEE Access, Special Section on Network Resource Management in Flying Ad Hoc Net-works: Challenges, Potentials, Future Applications, and Way forward, to appear.
- IEEE Access, Special Section on Urban computing and intelligence, to appear.
- Springer Neural Computing and Applications Journal, Special Issue on Multi-access Edge Computing Enabled Internet of Intelligences, to appear.
- IEEE/CIC China Communications Journal, Special Issue on Quality of Experience for multimedia communications, to appear.
- "Digital Twin for Industrial Internet of Things" http://www.ieee-ies.org/images/files/tii/ss/2022/Digital_Twin_for_Industrial_Internet_of_Things_2022-1-22.pdf

Conferences
- IEEE ICCC https://iccc2021.ieee-iccc.org/

SIG Son Signal Processing Techniques for Big Data and Wireless Edge Intelligence

Its mission is to provide a platform to exchange ideas, initiate collaboration, and promote research activities that are broadly related to signal processing for big data and machine learning in wireless networks.

The SIG has the following activities:

Conferences
- Co-organizing the 3rd GLOBECOM Workshop on Edge Learning over 5G Mobile Networks and Beyond, in GLOBECOM 2022
- Co-chairing IEEE WCNC 2022 Workshop on Intelligent Computing and Caching at the Network Edge
- Co-chairing IEEE/CIC ICCC Workshop on Green Edge Intelligence and Distributed AI

Webinar
- SPCC Webinar: Quantum Technology for NextG: Challenges & Opportunities, by Prof. Sachin Shetty, April 15, 2022

SIG on REconFigurabLE Intelligent Surfaces for Signal Processing and CommunicatIONS (REFLECTIONS)

Its mission is to provide a research and networking platform to collaborate, exchange ideas, and promote initiatives on Reconfigurable Intelligent Surfaces for Signal Processing and Communications.

The SIG has the following activities:

Conferences
- ICC 2022
    o Special Workshop Reconfigurable Intelligent Surfaces
    o Tutorial "Reconfigurable Intelligent Surfaces: Electromagnetic Models, Design, and Future Directions", by A. Zappone, M. Di Renzo
- GLOBECOM 2022: Workshop on Holographic MIMO Communications
Doctoral Schools
- DigiCosme Spring School 2022: Emerging and Future Communication Networks: Technologies, Architectures, and Tools, April 5-8, Paris.
- H2020-Metawireless Doctoral School on RIS-based wireless networks, March 8-10 (online).
New Horizon Europe Project
- INTEGRATE: Doctoral Network on the use of RIS for joint communication and sensing (to start in March 2023)

SIG on Signal Processing Techniques for Next Generation Multiple Access (NGMA)

Its mission is to provide a research and networking platform to collaborate, exchange ideas, and promote initiatives on advanced signal processing on Next Generation Multiple Access (NGMA) in wireless networks.

The SIG has the following activities:

Conferences
- GLOBECOM 2022: Workshop on Next Generation Multiple Access (NGMA) for Future Wireless Communications
- IEEE VTC Spring 2022 Tutorial on "Evolution of NOMA Toward Next Generation Multiple Access", June 2022.
- IEEE ICC 2022 Tutorial on "Evolution of NOMA Toward Next Generation Multiple Access", May 2022.
Seminars
- "Recent Advances in Non-Orthogonal Multiple Access in 6G Wireless Networks" by Prof. Zhiguo Ding on Jan. 2022.
- "Asynchronous Non-Orthogonal Multiple Access (ANOMA)" by Prof. Hamid Jafarkhani on Mar. 2022.
- "Stochastic Multi-Armed Bandit with Knapsack and its Application to Distributed AP/Server Selection Problem" by Prof. Ekram Hossain on 24 May 2022.
More information: https://sites.google.com/view/comsoc-spcc-sig-ngma/seminar-series

SIG on Orthogonal Time Frequency Space (OTFS)

Its aim is to provide a platform to bring together academic and industrial researchers in an effort to identify and discuss the major technical challenges, recent breakthroughs, and new applications related to OTFS.

The SIG has the following activities:

Journal Special Issues
- China Communications Special Issue (Deadline: July 15 2022)
- IEEE Communications Magazine Special Issue (Deadline: Aug. 1 2022)
- IEEE ComSoc Best Readings list (in preparation)

Conferences
- IEEE VTC 2022-Spring two tutorials (June 2022)
- IEEE ICASSP 2022 Special Session (May 2022)
- IEEE ICC 2022 Workshop on OTFS (May 2022): Keynote Speakers: Prof. Jinhong Yuan, Prof. Hai Lin.

OTFS Seminar Series
- Third seminar (May, 2022), speaker: Gerhard Fettweis
- Confirmed Speakers: Jinhong Yuan, Andreas Molisch, Giuseppe Caire

Standardization activities

Standard development is critical for deployment of communication technologies and also has a complex interplay between the academic and industrial sectors. SPCC TC welcomes its members to become part of the IEEE standard activities. It also welcomes all volunteers from standardization groups to participate to the SPCC TC activities.

SPCC has our representative monitoring the most recent standard development

SPCC representative: Richie Leo, ZTE Corporation

3GPP news
- December 17, 2021: "A globally harmonized standard" A plan of action was agreed at the 3GPP TSG RAN plenary, to allow the merger of 5Gi into 5G, with specific milestones set for both 3GPP and TSDSI.
- January 26, 2022: A workshop organized by the GSMA Operator Platform Group (OPG) has gathered inputs from 3GPP and ETSI to help the Association to compile a mapping of specifications for enabling Telco Edge Computing platforms - that meet the requirements of their new Operator Platform API Group (OPAG).
- Heading into Release 18 and verticals: With the most recent 5G standards (Release 15 to Release 17), and the advent of the industry 4.0 revolution, there has been a greater emphasis within 3GPP to develop features that go beyond typical end-consumer expectations (e.g. higher speeds, better coverage), and towards capabilities that can enhance the communications for vertical industries such as public safety, automotive, drones, factories of the future, IoT… and in a manner that such capabilities are natively available within the 5G system.

Recent news in ETSI

- April 20, 2022: ETSI RELEASES ITS ANNUAL REPORT AND WORK PROGRAMME 2022-2023.
- April 21, 2022: The 3rd ETSI **C-**V2X Plugtests achieved a success rate of 93%, showing positive multi-vendor interoperability. 226 test scenarios were executed in a laboratory and outdoor environment. All results are available in the newly released Report.

<u>Others</u>
- April 7, 2022: RIS TECH Alliance (RISTA) Established in Beijing with 87 founding members across the globe.