

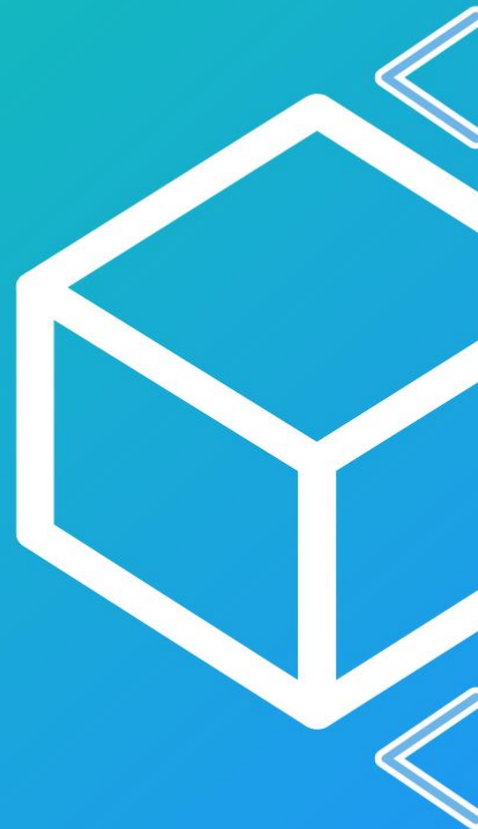
COMMUNICATIONS SOFTWARE

FALL 2021

Communications Software technical Committee

CommSoft TC

Chair: Abdellatif Kobbane
Vice-Chair: Abd-Elhamid M. Taha
Secretary: Hassine Moun gla
Co-EiCs: Moayad Aloqaily
Aiman Erbad



About

The Communications Software (CommSoft) technical committee interest stems from all emerging fields of communications software and its various aspects and applications. The mission of this committee is to advance the state of the art in communications software and its various aspects and applications. It serves as the major forum for discussion among communications software professionals in both academia and industries.

The committee convenes twice a year in tandem with IEEE Communication Society Conferences, namely ICC and Globecom. It supports several Special Interest Groups (SIGs) dedicated to focused topics within the committees.

Moreover, the committee releases a biannual newsletter (i.e. eLetter) on its activity and updates.

Finally, if your interest lies in the communications software TC interest, please don't hesitate to join the committee!

The committee past chairs are:

2019-2020 | Adlen Ksentini, EuroCom

2017-2018 | Hacene Fouchal, University of Reims Champagne-Ardenne

2015-2016 | Lynda Mokdad, University of Paris-Est

2014 | Abdallah Shami, Western University

2012-2013 | Joel Rodrigues, University of Beira Interior, Portugal

2010-2011 | Abdelhamid Mellouk, University of Paris 12

2008-2009 | Pascal Lorenz, University of Haute Alsace

2006-2007 | Algirdas Pakstas, London Metropolitan University



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Links

- TC Website

<https://commsoft.committees.comsoc.org/>

- TC eLetters

<https://commsoft.committees.comsoc.org/eletter/>

- TC SIGs

<https://commsoft.committees.comsoc.org/sigs/>

- TC Mailing List

<https://commsoft.committees.comsoc.org/mlist/>

Awards/Distinctions

Certificate of appreciation and Excellence

1. Several authors from the TC have received the recognition of highly cited authors:

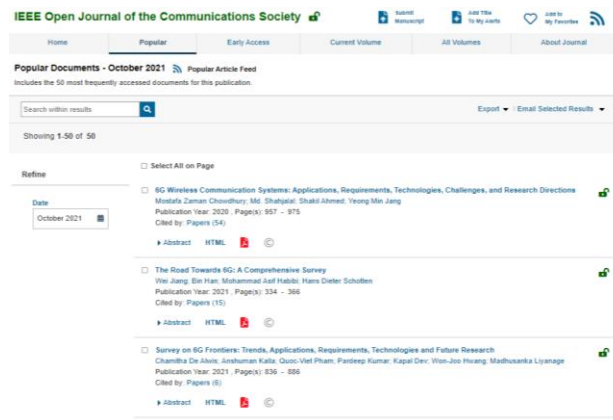
- **M. Guizani**
- **M. H. Rehmani**

2. **Ö. Özkasap** and her master student **F. Safdar Ali** have received the award of the 2nd best master thesis by IEEE Computer Society Turkey section 2021. The master thesis is entitled: ***SynergyGrids: Blockchain Assisted Peer-to-Peer Energy Trading and Prosumer Management Framework***



Popular Articles

1. The paper "**Survey on 6G Frontiers: Trends, Applications, Requirements, Technologies and Future Research**" by the CommSoft member **K. Dev** got selected as the 3rd most popular article in IEEE Open Journal of the Communications Society. Link to the paper: <https://ieeexplore.ieee.org/document/9397776>



Editorial Appointments

- **Kapal Dev** joined the Editorial Board as Area Editor in Elsevier Physical Communication:
<https://www.journals.elsevier.com/physical-communication/editorial-board>
- **Moayad Aloqaily** Joined editorial board of Elsevier Ad Hoc Networks:
<https://www.sciencedirect.com/journal/ad-hoc-networks/about/editorial-board>

Newspaper Coverage

- **M. H. Rehmani** wrote two columns in the newspaper:
<https://www.pakistantoday.com.pk/2021/11/05/bridging-industry-academia-gap-through-work-placement/>
<https://www.pakistantoday.com.pk/2021/09/28/academic-university-rankings-myths-and-reality/>

Industrial Activity

- **S. Misra** is engaged in the development of smart SDN based IoT and networking architecture for future smart grids with **Hitachi energies** as part of the sponsored project “**Unified Software-Defined Architecture for Industrial Internet of Things**”;

Special Interest Groups Activities

The CommSoft TC currently has the following active SIGs. TC's SIG Coordinator is *M. Ayaida*.

- **Blockchains and Applications**
 - Current Coordinator: *M. Aloqaily*
- **ML and AI for Networking**
 - Current Coordinator: *M. Erol-Kantarci*
- **NFV and SDN Technologies**
 - Current Coordinator: *S. Misra*
 - Prior Coordinator: *A. Ksentini*
- **Security in Software Communication**
 - Current Coordinator: *E. Renault*
 - Prior Coordinators: *J. Ben-Othman and Y. Saavedra*
- **Big Data Communication Software**
 - Current Coordinator: *H. Moun gla*
 - Prior Coordinator: *P. Chatzimisios*
- **Communication Software for Vehicular Ad Hoc Networks**
 - Current Coordinator: *H. Fouchal*
- **Performance Evaluation in Communications Software**
 - Current Coordinator: *A.*

In this edition of the *eLetter*, we will include the activities conducted by the first three SIGs.

- **IEEE ComSoc-related events - International Webinar on "Next Generation IoT"** organized by TC CommSoft: SIG on SDN/NFV held on November 15, 2021 (https://ieee-webinar.github.io/sdn_nfv/).

Speakers:

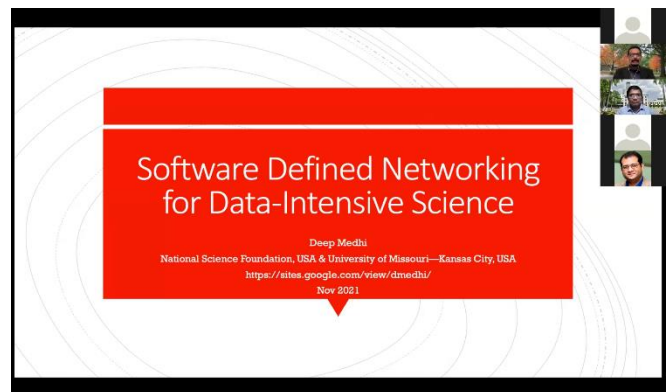
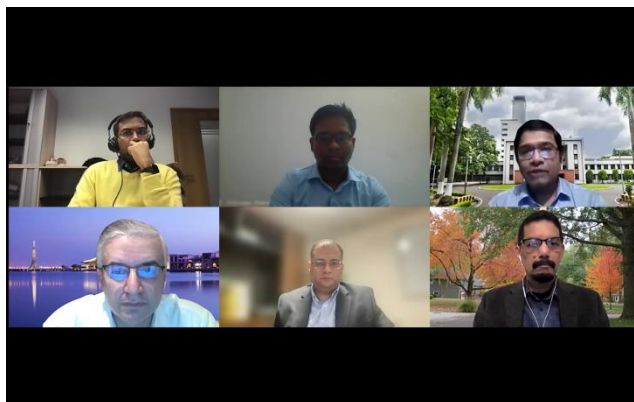
Mohamed-Slim Alouini, IEEE Fellow, Distinguished Professor, King Abdullah University of Science and Technology (KAUST), Saudi Arabia ;

Walid Saad, IEEE Fellow, Virginia Tech, USA ;

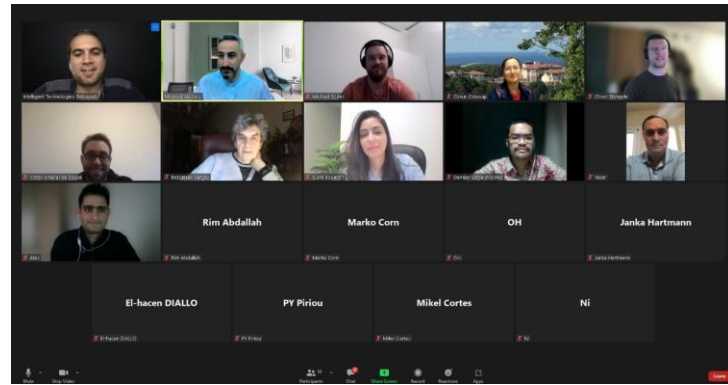
Deep Medhi, IEEE Fellow, University of Missouri, Kansas City and Program Director, Computer & Network Systems (CNS) Division, National Science Foundation (NSF), USA

Principal Host: *S. Misra*

Co-Host: *A. Roy, A. Mondal*



- **M. Aloqaily** and **Ö. Gürçan** has chaired the 3rd **IEEE Conference on Blockchain Computing and Applications (BCCA 2021)**, that was held online: November 15- 16 2021



- **M. Erol-Kantarci** gave distinguished Lectures on:
 - “Deep and Reinforcement Learning in 5G and 6G,” IEEE Distinguished Lecturer Series – IEEE Egypt Chapter, 2 June 2021.
 - “AI-Enabled Wireless Networks,” IEEE Distinguished Lecturer Series – IEEE Seattle Section Joint Chapter, IEEE Vancouver Joint Chapter and IEEE Victoria Section Joint Chapter, 20 May 2021.



- **M. Erol-Kantarci** has also delivered two keynotes on:
 - “AI-Enabled Wireless Networks: A Vision for 6G”, IEEE Local Computer Networks (LCN), October 2021.
 - “AI-enabled Energy Trading for Microgrids and Transactive Energy Systems,” at IEEE 3rd Global Power, Energy and Communication Conference, October 2021.

Ongoing Research Project

- **S. Misra** is the PIs in the following projects:
 - **Title:** AI for Agriculture and Food Sustainability (2020-2023),
Sponsor: Ministry of Electronic and Information Technology, India
 - **Title:** AI and Virtual Reality Modelling and Collaborative Learning of Risk and situational Awareness in the Socio-Technical System Under Disruptions (2021-2024),
Sponsor : SERB, Department of Science and Technology, India
 - **Title:** Unified Software-Defined Architecture for Industrial Internet of Things (2019-2022),
Sponsor : SERB IMPRINT-II, India

Call For White Paper

MBZIRC Maritime Grand Challenge

<https://www.mbzirc.com/>

ABOUT MBZIRC

The **Mohamed Bin Zayed International Robotics Challenge (MBZIRC)** aims to be one of the world's largest and most prestigious international robotics competitions.

Held every two years in Abu Dhabi as a real-world challenge for universities, research centres, companies and individual innovators from all over the world, we inspire the development of solutions in autonomous robotic aerial and surface vehicle technologies.

At the forefront of exploration and experimentation, we set out to find novel technological successes that are resilient in an ever-changing market, reinforcing the UAE's role as an emerging hub for advanced technology innovations.

MBZIRC is run by **ASPIRE**, the programme management pillar of Abu Dhabi's **Advanced Technology Research Council**, which oversees technology research in the Emirate.

Submission details

- **Only registered participants can submit a white paper.**
- Each team can submit revisions of its white paper (eg. Technical approach revision, updated team information etc.) during the window for white paper submission. The last white paper to be submitted by each team will be considered for judging.
- **Deadline for submission:** 31 January 2022. 6pm GST (Gulf Standard Time). White papers received after this time will not be considered.

THE PRIZE PURSE

First Prize:
US \$2,000,000

Second Prize:
US \$500,000

Third Prize:
US \$250,000

→ At the end of the simulation phase, a prize of **US \$500,000** will be split among the teams progressing to the demonstration phase.

MARITIME GRAND CHALLENGE - THE TIMELINE

The MBZIRC Maritime Grand Challenge will be held over three phases:



Past Events

Conferences and Workshops

- **S. Misra, Workshop Co-Chair**, IEEE ICC 2021 Workshop, COVI-COM: Communication, IoT, and AI technologies to counter COVID-19

(<https://sites.google.com/view/icccovicom2021/home>)



- **A. Dandoush** was the **Local Arrangements Chair** of the 18th Annual IFIP International Conference on Network and Parallel Computing (IFIP NPC) November 03-05, 2021, Paris (<https://npc2021.dnac.org/>)

18th Annual IFIP International Conference on Network and Parallel Computing (IFIP NPC)

November 03-05, 2021
Paris, France (Hybrid Conference)



- **J. Lorincz** has been the organizer of the **12th Symposium on Green Networking And Computing (SGNC 2021)**, that was held on: September 25th 2021



In cooperation with:



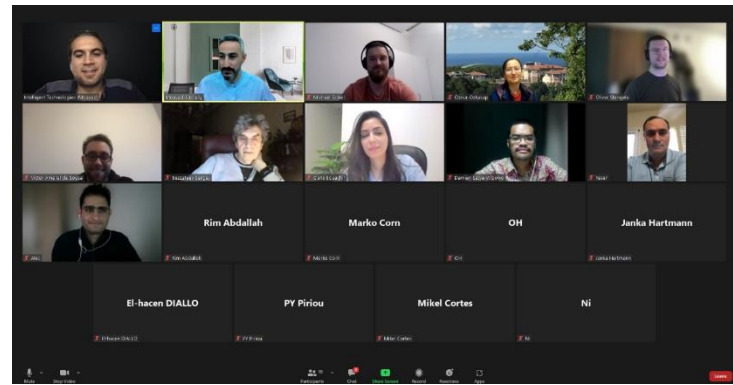
THE 12th SYMPOSIUM ON GREEN NETWORKING AND COMPUTING (SGNC 2021) – September 24, 2021, Hotel Amfora Hvar, Room Maestral - virtual event, 14:00 -15:30

Josip Lorincz, FESB, University of Split, Croatia (mail: josip.lorincz@fesb.hr)

Call for Papers

The 12th Symposium on "Green Networking and Computing" (SGNC 2021) will be held in the frame of the 29th International Conference on Software, Telecommunications, and Computer Networks (*SoftCOM 2021*). The Symposium is organised since 2010 in the frame of the *SoftCOM* conference, which will take place on September 23-25, 2021 in *Amfora Hvar Grand Beach Resort in Hvar, island of Hvar, Croatia*. In the frame of the Symposium, the 12th "Special Session on green

- **M. Aloqaily and Ö. Gürçan** has chaired the **the 3rd IEEE Conference on Blockchain Computing and Applications (BCCA 2021)**, that was held online: November 15- 16 2021



- **The workshop on Intelligent Communications for Decentralized Energy Management (EnergyCom2021)**, co-located with GLOBECOM was held Online on December 7th 2021



PROGRAM

Tuesday, December 7th 2021

Important dates

Papers due: 31 July 2021 14 August 2021

- **The 2nd Workshop on Network Management for 6G Communication Systems (NetMan6G)**, co-located with GLOBECOM was held on December 7th



➤ **Dinko Begusic** organized **SoftCOM 2021 - The 29th International Conference on Software, Telecommunications and Computer Networks**



a) Plenary session has been moderated by Sinisa Krajnovic, Ericsson and Dinko Begusic, University of Split. b) Closing of the last conference session: Special session on advances in data analytics.



a) Coffee break in attractive ambience of the island of Hvar. b) Gathering for a City of Hvar walking tour.

➤ **Safa Otoum and Nadra Guizani** have organized **The 1st Workshop on Securing Next-Generation Connected Healthcare Systems using Futuristic Technologies**), co-located with GLOBECOM to be held on December 7th, 2021.

WS-18: WORKSHOP ON SECURING NEXT-GENERATION CONNECTED HEALTHCARE SYSTEMS USING FUTURISTIC TECHNOLOGIES

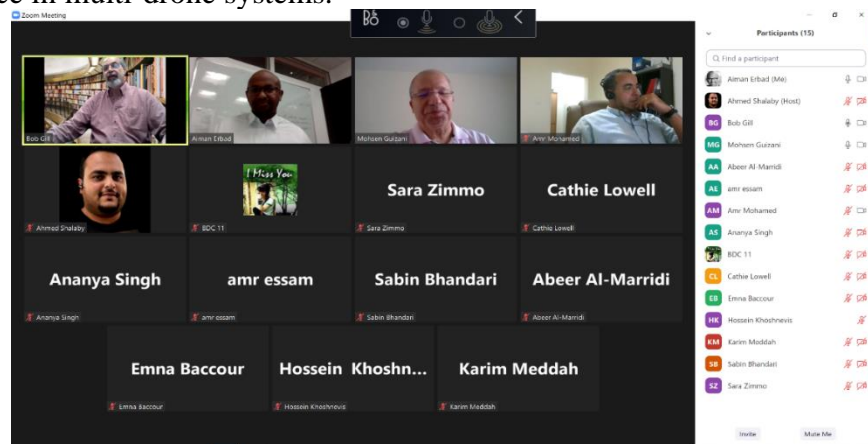
IEEE Globecom 2021 Workshop on
Securing Next-Generation Connected Healthcare Systems using Futuristic Technologies
 7-11 December 2021 // Madrid, Spain

Talks

- **S. Misra** spoke on “**Blockchain for Security in Cyber Physical Systems**” in the Panel Discussion Session on “Cyber Security in Cyber Physical Systems”, IEEE ICC 2021 Workshop on “Sensing-as-a-Service for Industrial Cyber Physical Systems”, Montreal (Virtual), Canada, June 18, 2021.
- **S. Misra** spoke on
 - “**Cross-domain Convergence in IoT**”, FDP on Applications on Artificial Intelligence in Industry 4.0, MES College of Engineering, Kuttipuram, Kerala, July 13, 2021.
 - “**Internet of Things: Enabling Cross-domain Convergence and Innovation**”, ATAL FDP on "Enabling Technologies for Artificial Intelligence, Machine Learning and IOT", June 21-25, 2021, ZHCET, Aligarh Muslim University, UP, India.
 - “**Introduction to IoT and Cross-Domain Convergence in IoT with Sensor-Cloud**”, E&ICT FDP on Machine Learning for IoT Applications, June 7, 2021.
- **M. Erol-Kantarci** gave several keynotes on:
 - “The Nexus of AI and Communications: The Frontier for 6G,” at Royal Bank of Canada (RBC) Tech Expo Catalyst, September 2021.
 - “AI-Enabled Wireless Networks: A Bridge from 5G to 6G,” at IEEE International Conference on INnovations in Intelligent SysTems and Applications (INISTA), August 2021.
 - “AI-Enabled Future Wireless Networks and Security,” at IEEE ICC 4th Workshop on 5G and Beyond Wireless Security (IEEE WIRELESS-SEC), June 2021.

Tutorials

- **E. Erbad** organized a tutorial in CCECE titled "Edge-based distributed inference for efficient IoT Applications". The main topic was about distributed inference of deep neural networks for surveillance in multi-drone systems.

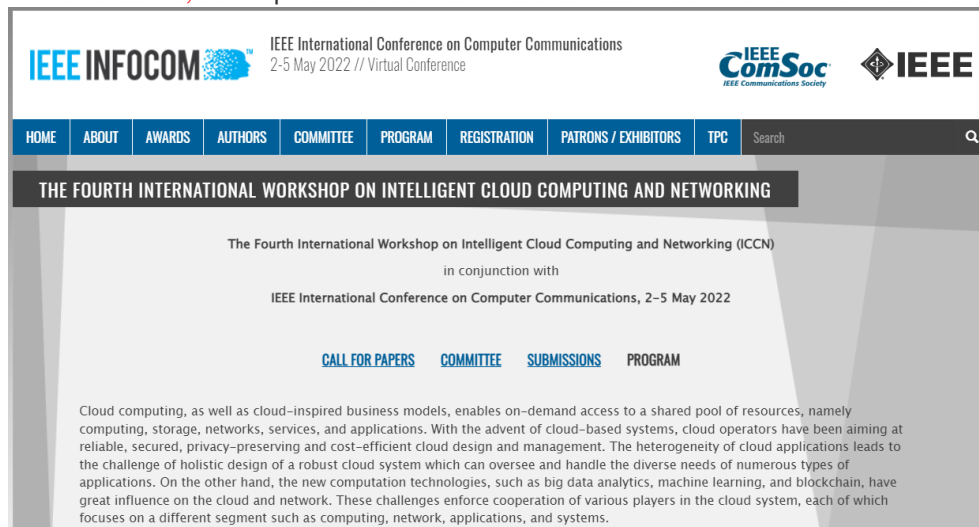


- **S. Misra** and **A. Roy** delivered a tutorial on “**Sensors-as-a-Service for Internet of Things**” at the IEEE GlobeCom, Madrid, Spain / Hybrid: In-Person and Virtual Conference, 2021
- **A. Roy** delivered a tutorial on Enabling “**Sensors-as-a-Service for IoT**” at theSCS SPECTS, Virginia, USA / Hybrid On-line Conference, 2021

Upcoming Events

Conferences and Workshops

- **The 4th International Workshop on Intelligent Cloud Computing and Networking (ICCN)** in conjunction with IEEE INFOCOM 2022
When: May 2-5, 2022 | **Where:** Virtual Conference | **Website:** <https://infocom2022.ieee-infocom.org/fourth-international-workshop-intelligent-cloud-computing-and-networking>
Deadline: Dec. 20th, 2021 |



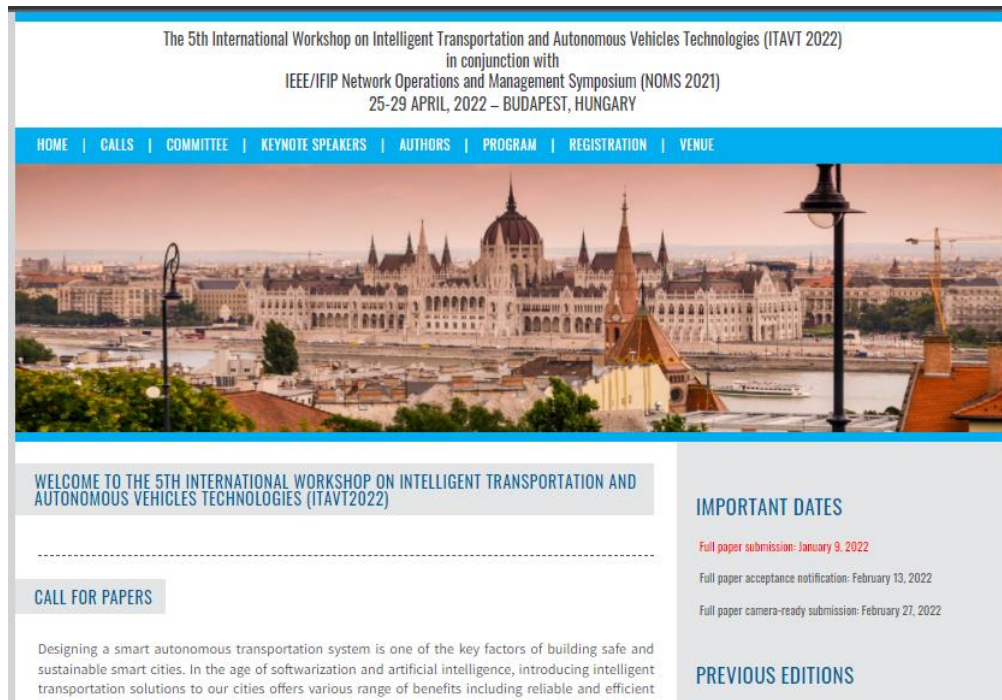
General Chairs:

Ruidong Li, Kanazawa University, Japan
Alfredo Grieco, Politecnico di Bari, Italy
Deze Zeng, China University of Geosciences, China

Technical Program Committee Chairs:

Ruiting Zhou, Wuhan University, China
Moayad Aloqaily, xAnalytics Inc., Ottawa, Canada
Zhi Zhou, Sun Yat-sen University, China

- **The 5th International Workshop on Intelligent Transportation and Autonomous Vehicles Technologies (ITAVT 2022)** in conjunction with NOMS2022
When: April 25 - 29, 2022 | **Where:** Budapest, Hungary | **Website:** <https://icnetlab.org/ITAVT2022/index>
Deadline: Jan. 9th, 2022 |



General Co-Chairs

Moayad Aloqaily, xAnalytics Inc., Ottawa, Canada

Öznur Özkasap, Koç University, Istanbul, Turkey

Technical Program Co-Chairs

Ouns Bouachir, Zayed University, UAE

Müge Erel-Özçevik, Manisa Celal Bayar University, Turkey

➤ 1st Workshop on **Artificial Intelligence and Blockchain Technologies for Smart Cities with 6G**,

When: Jan 31st, 2022 (**Updated Date**) | **Where:** New Orleans, Louisiana, United States|

Website: <https://sites.google.com/view/mobicom2021-6g-abs/home>

co-located with the ACM MobiCom 2021



Workshop Chairs:

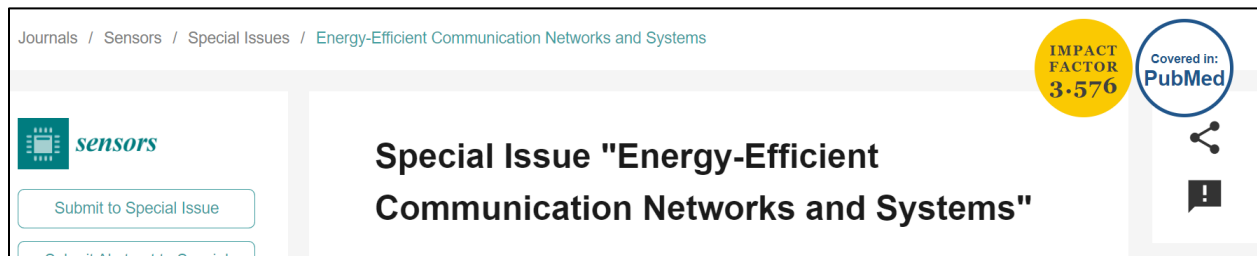
Ireland Vijay K. Shah, Virginia Tech, USA,

Jeffrey H. Reed, Virginia Tech, USA

Special Issues

The CommSoft TC members are active in organizing SIs in several reputable journals

- **J. Lorincz** (FESB, University of Split) is a guest editor in *the Sensors journal*, MDPI, for the Special Issue on “[Energy-Efficient Communication Networks and Systems](#)“.



The screenshot shows the MDPI Sensors journal website. The breadcrumb trail is 'Journals / Sensors / Special Issues / Energy-Efficient Communication Networks and Systems'. The journal logo 'sensors' is on the left. A yellow badge indicates an 'IMPACT FACTOR 3.576'. A blue badge says 'Covered in: PubMed'. The main heading is 'Special Issue "Energy-Efficient Communication Networks and Systems"'. There are buttons for 'Submit to Special Issue' and 'Submit Abstract to Special Issue'.

For more information visit: https://www.mdpi.com/journal/sensors/special_issues/EECNs

- **K. Dev** is the Lead Guest Editor for a special issue in on “[Zero Touch Networks - Opportunities, Challenges and Potential Applications](#)” in *IEEE Network Magazine*



The screenshot shows the IEEE Network Magazine website. The breadcrumb trail is 'Home / Publications / Magazines / IEEE Network / Call for Papers / Zero Touch Networks: Opportunities, Challenges and Potential Applications'. The main heading is 'Zero Touch Networks: Opportunities, Challenges and Potential Applications'. Below the heading is a table with two columns: 'Publication Date' and 'Manuscript Submission Deadline'. The publication date is 'July 2022' and the submission deadline is '15 January 2022'.

For more information visit: <https://www.comsoc.org/publications/magazines/ieee-network/cfp/zero-touch-networks-opportunities-challenges-and-potential>



- **K. Dev** is the Lead Guest Editor for a special issue in on “[Autonomous Networks: Opportunities, Challenges, and Applications](#)” in *IEEE Standard Communication Magazine*.



The screenshot shows the IEEE Communications Standards Magazine website. The breadcrumb trail is 'Home / Publications / Magazines / IEEE Communications Standards Magazine / Call for Papers / Autonomous Networks: Opportunities, Challenges, and Applications'. The main heading is 'Autonomous Networks: Opportunities, Challenges, and Applications'. Below the heading is a table with two columns: 'Publication Date' and 'Manuscript Submission Deadline'. The publication date is 'June 2022' and the submission deadline is '1 December 2021'. At the bottom left, it says 'Special Issue'.

For more information visit: <https://www.comsoc.org/publications/magazines/ieee-communications-standards-magazine/cfp/autonomous-networks-opportunities>

- **Dr. M. H. Rehmani** is a guest editor in “[Smart and Flexible Spectrum Technologies for Next Generation Wireless Communication Systems](#)” in *IEEE Open Journal of Vehicular Technology*

	IEEE Open Journal of Vehicular Technology	
<p>Call for Papers for Special Issue on</p> <p>Smart and Flexible Spectrum Technologies for</p> <p>Next Generation Wireless Communication Systems</p>		

For more information visit: https://vtsociety.org/wp-content/uploads/2021/11/OJVT-SI-CFP_smart-spectrum_deadline_extended.pdf

- **S. Misra** is the Guest Editor of *IEEE Journal on Selected Areas in Communications*, “[Edge-Based Wireless Communications Technologies to Counter Communicable Infectious Diseases](#)”, 2021-2022.

<small>Home / Publications / Magazines / IEEE Network / Call for Papers / Managing Next-Generation Networks for Intelligent Services and Applications</small>	
Managing Next-Generation Networks for Intelligent Services and Applications	
Publication Date May 2022	Manuscript Submission Deadline 30 September 2021

For more information visit: <https://www.comsoc.org/publications/journals/ieee-jsac/cfp/edge-based-wireless-communications-technologies-counter>

- **S. Misra** is the Lead Guest Editor of *IEEE Internet of Things Journal*, Special Issue on “[Artificial Intelligence-Based Systems for Industrial Internet of Things and Industry 4.0](#)”, 2021.

<ul style="list-style-type: none"> • Special Issue on Artificial Intelligence-Based Systems for Industrial Internet of Things and Industry 4.0
Submission Deadline: May 1, 2021
Guest Editors: Sudip Misra, Vincent Wong, Ashutosh Dutta, Robert S. Fish, Rajeev Shorey

For more information visit: https://ieee-iotj.org/wp-content/uploads/2020/12/CFP_AI_IoTJ.pdf

- **Dr. M. Aloqaily** is a guest editor in the *IEEE Transactions on Computational Social Systems*, for the special issue “[Advanced Cognitive Computing for Data-Driven Computational Social Systems](#)”.

	CALL FOR PAPERS
IEEE Transactions on Computational Social Systems	
Special Issue on Advanced Cognitive Computing for Data-Driven Computational Social Systems	

For more information visit:

https://www.ieeesmc.org/images/CFP_of_SI_on_Advanced_Cognitive_Computing_for_Data-Driven_Computational_Social_Systems.pdf

- Dr. **M. Aloqaily** is a guest editor in the Sustainable Energy Technologies and Assessments, for the special issue “State-of-the-art Renewable Energy Harvesting from Agricultural Residues”.



ISSN: 2213-1388

Sustainable Energy Technologies and Assessments

[Submit your Paper](#) [View Articles](#)

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Call for Papers on Special Issue: State-of-the-art Renewable Energy Harvesting from Agricultural Residues

For more information visit: <https://www.journals.elsevier.com/sustainable-energy-technologies-and-assessments/call-for-papers/call-for-papers-on-special-issue-state-of-the-art-renewable-energy-harvesting-from-agricultural-residues>.

TC Virtual Seminar Series

Abd-Elhamid M. Taha

After a great start for the first half of the year, the TC continued with its virtual seminar series. With an eye on the TC's constituents and its interest, the series aims at reflecting the TC's lines of activity and respond to emerging advances. It also aims at presenting the TC's spirit of inclusion and support with other entities in the IEEE Communications Society (ComSoc), including regional ComSoc Chapters, Standardization and DLP, and Education and Training.

Key to the organization of the series was the generous support of the IEEE ComSoc Chapter in Saudi Arabia, especially through the Chapter's Chair, Dr. Mohammed S. Juaid. The support of the IEEE ComSoc Office in New York and the DLP program is also greatly appreciated.

Two instances took place in the second half of the year.

- *Prof. **Nelson Fonseca** of The State University of Campinas offered the third installment of the series on September 1, 2021. The seminar was entitled "Federated Learning: State of the Art, Current Trend and Challenges"*
- *Prof. **Ekram Hossain** of the University of Manitoba offered the fourth installment on November 8, 2021. The seminar was entitled "Computation Offloading and Activation of Mobile Edge Computing Servers Using Minority Game Models".*

The final installment of the year will be taking place sometime during December, 2021. It will be offered by Dr. Michele Nogueira. Details will be communicated in due course through the TC's mailing list.

As we come close to turn the page on 2021, we are working with our TC members on continuing the series through 2022. Towards this, we would greatly appreciate suggestion on speakers and/or topics to be presented. All suggestions can be emailed to hamid.taha@ieee.org.