



International Conference

On

Computing, Communications, and Cyber-Security (IC4S)

12th-13th October 2019

CHANDIGARH



[Approved]

Lecture Notes in Networks and Systems, Springer

**SPECIAL SESSION ON ADVANCES IN IoT, OPTICAL NETWORKS, 5G,
TACTILE INTERNET AND NOMA (SS13_AIOTN)**



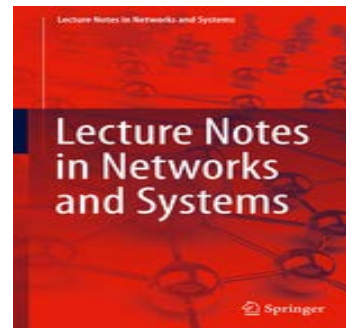
Invitation for Research Paper in Scopus Indexed

12th -13th October, 2019 (Venue: CHANDIGARH)

Conference Website: <http://www.ic4s.co.in/cop.php>

IC4S-2019 Conference Proceedings (Indexed by DBLP and Scopus)

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Paper Submission Deadline: 15th August, 2019

Paper submission Link : <http://www.ic4s.co.in/submission.php>

(Through Easy Chair Only)

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AIMS & SCOPE

The current Internet-of-Things (IoT) communication is going to increase by 1000 folds by 2025. The forecasted rise in data traffic is also expected to rise to 163 zettabytes worldwide by 2025. Such tremendous growth of data traffic poses a challenge to the current communication infrastructures. Thus, optical networks needs to become the core of our telecommunication and data networking infrastructure. Currently, optical packet and burst switching caters the need of the core routing in optical domain. The future IoT applications will encompass human-to-machine and machine-to-machine interactions in real-time environments. Thus, optical core routers/switches faces the dual issue to communicate in ultra-low frequency with low power requirements and at the same time ensure high availability, reliability and security in communication. The optical core switches can be built with requirements of the 5G protocol stack to communicate with wide number of users. Such networks may be termed as Optical 5G networks. Also, the devices and humans needs to communicate spatially to support large number of users operating over responsive applications. The rise of optical networks over 5G communication supports low round trip latency and haptic interactions with visual feedback while managing time lag between applications. This responsive internet is termed as Tactile Internet. Tactile Internet enhances social interactions between users operating over a communication range. Finally, the users interact on the basis of access techniques orthogonally divided into time, frequency and space. This poses limitations on scalability and also induces channel impairments. Since resources are scarce in low-powered environments like IoT, orthogonal techniques are now redundant. To support Tactile Internet, Non-Orthogonal Multiple Access (NOMA) solutions divide resources among users at the cost of increased receiver transmitter complexity. Thus, NOMA provides increased strength to communication systems fuelled in optical environments with 5G communication infrastructures as well as maintaining responsive feedback and power requirements as specified by the IoT protocol stack. This Special session looks at the possible advances related to possible integration of the core networks like optical networks, 5G, IoT, Tactile Internet and NOMA techniques.

Tracks: (Sub-Themes)

- Coding, modulation, and signal processing for optical systems
- Multi-layer and Multi-domain optical network design and operations
- Elastic and flexible grid optical networks
- Energy efficient optical networks
- Free space optical communications and networking
- Impairment mitigation techniques
- Innovations in optical X-haul networks and fixed-mobile convergence
- Inter- and intra- data center optical networks
- Multi-band optical spectrum utilization and optimization
- OFDM and MIMO for optical systems
- Optical channel characterization
- Optical network architectures, design, and performance evaluation
- Optical networks and systems for IoT and smart grids
- Optical switching technologies, devices, and architectures
- Routing and spectrum assignment for optical networks
- Legacy Networks in IoT infrastructure

- 5G Networks in IoT
- IPv6, 6LoWPAN, RPL, 6TiSCH, W3C in IoT
- Network Coding in the IoT environment
- D2D and M2M Communications in IoT
- High Band, Narrow Band Networks in IoT
- Software Defined Networks deployment in IoT applications
- Sensor Network using IoT
- Massive IoT
- Ultra-dense network using 5G
- Multiple TRPs in 5G
- Cloud radio access network using 5G
- Redundant or multi-point transmission, multi-point connectivity in Tactile Internet Applications
- Novel approaches towards session management and protocol stack in Tactile Internet Applications
- Network infrastructure and core network concepts in Tactile Internet Applications
- Cloud-RAN and mobile edge-cloud concepts in the context of latency- or reliability-critical applications
- Architectural enablers for distributed or edge computing in Tactile Internet Applications
- Co-existence of traffic with stringent latency/reliability requirements in Tactile Internet Applications
- Haptic codecs
- Machine learning and big data aided adaptive NOMA
- Multiple antenna signal processing techniques for NOMA
- Cooperative signal processing for NOMA
- Resource allocation for NOMA assisted wireless caching and mobile edge computing
- Security provisioning for NOMA with interference exploitation
- Advanced signal processing algorithms for the cross-layer design of NOMA
- Energy-efficient signal processing design for NOMA
- Signal detection and joint transceiver design for NOMA
- Low-complexity channel estimation for NOMA
- NOMA for Internet-of-Things (IoT)

PAPER SUBMISSION PROCESS:

Please submit your paper (in word/pdf format) at following emails:

Email: pronoya.bhattacharya@nirmauni.ac.in, arun.sachan@gmail.com with Subject Line “**Research Paper for Special Session SS13_AIOTN**” from your email.

Papers must be submitted electronically (in doc/docx/ PDF format) via on-line submission using the Easy Chair system at the following link:

<https://easychair.org/my/conference?conf=ic4s>

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For any further queries related to this special session, please contact the session chair at:

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Important Dates:

Submission of Full Papers Deadline

15th Aug, 2019

Notification of Acceptance Deadline

30th Aug, 2019

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