Arijit Roy

Assistant Professor,
Indian Institute of Information Technology Sri City,
Email-id : arijit.r@iiits.in, arijitroy.net@gmail.com
Mobile No.: +91-9475364212, +91-9641633907

Personal Information

- **Coordinator**, Entrepreneurship Cell and Gyan Circle Venture (GCV) at Indian Institute of Inforation Technology Sri City, India
- Ex-Member, **Mirror committee of Luxembourg**, ISO/IEC JTC 1/SC 41: IoT and Digital Twin
- Former Post-doctoral Researcher, **University of Luxembourg**, Luxembourg
- India-France **Raman-Charpak Fellow**
- Former **Senior Research Fellow** (**SRF**), Council of Scientific & Industrial Research (CSIR), Govt. of India.
- **PhD**, under Prof. Sudip Misra, ***Fellow IEEE, FNAE (India), FNASc (India), FIETE (India), FIET (UK), FRSPH (UK)***, Indian Institute of Technology Kharagpur, India
- **Director & Co-founder** of SensorDrops Networks Pvt. Ltd., 1A/2, Science and Technology Entrepreneurs' Park (STEP), Indian Institute of Technology Kharagpur, India
- **Research Group** - Parallel Computing & Optimisation Group (PCOG), University of Luxembourg
- **Area Expert**, IEEE ComSoc Technical Committee eHealth SIG on IoT
- Personal Webpage: Arijit Roy
- Academic Profile: Google Scholar, Publons

Experiences

Ongoing Research: Machine Learning for IoT Networks

- **Networked UAVs**:
  - Smart pricing for UAV-as-a-Service platform
  - Intelligent virtual UAV formation for UAV-as-a-Service
  - Smart Service Management in UAV-as-a-Service platform
- Smart Healthcare Systems
  - Fog-enabled Smart EEG system
  - Smart health monitoring system
- Sensor virtualization for IoT
  - Intelligent sensors and actors management for Sensors-as-a-Service paradigm
  - Mobility estimation and autonomous virtual sensor formation for Mobile Sensor-cloud

Experiences

Research and Project Handling

- Apr. 2021 – Apr. 2022: Post-doctoral Research Fellow in "EuroCC Project", European Govt. *Responsible for analyzing the requirements (both technical and non-technical) of HPC in the nations, and maximizing the usability of National HPC Centre of Luxembourg.*

- Nov. 2020 – Feb. 2021: Research Associate in "Ambulatory Sensing and Point-of-Care Recommendation for IoT-based Healthcare", sponsored by Indian National Academy of Engineering (INAE), Govt. of India. *Responsible for co-designing healthcare system architecture and implementing the real-time system*
- Jun. 2019 – Oct. 2021: Project Staff in "Ambulatory Sensing and Point-of-Care Recommendation for IoT-based Healthcare", sponsored by Indian National Academy of Engineering (INAE), Govt. of India. *Responsible for co-designing healthcare system architecture and implementing the real-time system*
- Aug. 2018 – Dec. 2020: Project Staff in an India-French project "Fog City: QoS - Aware Resource Management for Smart Cities", sponsored by Indo-French Centre for the Promotion of Advanced Research (CEFIPRA). *Responsible for co-designing fog-based solutions for implementing in the real-time systems*
- Jun. 2017– Jun. 2020: Project Staff in an India-UK project "SAFE: Secure and Usable IoT Ecosystem Project", sponsored by UGC-UKIERI. *Responsible for co-designing and implementing a blockchain framework for healthcare IoT*
- May 2017 – May 2020: Senior Research Fellow, Council of Scientific & Industrial Research (CSIR), Govt. of India. *Highly competitive and prestigious fellowship*
- Virtual Lab on Advanced Network Technologies, sponsored by the Ministry of Human Resource Development (MHRD), New Delhi, Govt. of India. This lab is widely used in different Institutes and Universities to conduct virtual experiments on advanced network topics.
    - Apr. 2016 – Apr. 2017: Senior Research Fellow. *Responsible for conducting seminars in different Institutes and Universities across India to demonstrate the basic know-how of the virtual lab*
    - Apr. 2013 – Mar. 2016: Senior Project Assistant. *Responsible for testing the virtual lab and manage all experimental modules.*
    - Mar. 2011 – Dec 2011: Junior Project Assistant. *Responsible for designing and developing different experimental modules on advanced topics of Networks.*
- Dec. 2011 – Mar. 2013: Junior Project Assistant in the research project "Target Tracking in the Presence of Malicious Nodes in Wireless Sensor Networks, sponsored by Institute Scheme for Innovative Research and Development, IIT Kharagpur, India. *Responsible for proposing a target tracking scheme in presence of malicious node in a sensor network.*

Teaching

- Teaching at Indian Institute of Information Technology Sri City, India
    - Computer Architecture: May-Jul, 2022
    - Operating Systems: Aug, 2022-Till-date
    - Computing for Internet of things: Aug, 2022-Till-date
- Teaching Assistantship for the National Programme on Technology Enhanced Learning (NPTEL) Massive Open Online Course (MOOC). *Responsible for assisting the course coordinator to develop course materials and assignments.*
    - Introduction to Internet of Things: Jul-Oct, 2017, Jan-Apr, 2018, Jul-Oct, 2018, Jan-Apr, 2019, Jul-Oct, 2019, Jan-Apr, 2019, Jan-Apr, 2020, and Jul-Oct, 2020
    - Wireless Ad Hoc and Sensor Networks: Jan-Mar, 2017 and Jan-Apr, 2018
- Teaching Assistantship at Indian Institute of Technology Kharagpur, India
    - Architecture and Protocols for IoT (CS61066): Autumn-2018, 2019
    - Wireless Ad-Hoc and Sensor Networks (IT60119): Autumn-2017
    - Software Engineering Theory (CS20006) and Lab (CS29006): Spring-2017, 2018, 2019, 2020
    - Programming and Data Structure Lab (CS19001): Autumn-2016
    - Advanced Network Technologies (IT60106): Spring-2016
- Apr. 2011 – Nov. 2013, Visiting Lecturer, The Institute of Engineers, IIT Kharagpur branch, India.

Industry
Aug. 2010–Feb. 2011, Junior Network Engineer (WB-SWAN), Intec Infonet Pvt. Ltd., India.

Distinguished Talks

- Topic: Sensing to Communication in IoT
  Venue: Professional Development Course on "Smart Manufacturing Industrial Informatics and Internet of Things (IoT)", National Institute of Technology Rourkela, sponsored by Rourkela Steel Plant, an unit of *Steel Authority of India Limited* (SAIL), India
  Purpose: Invited Lecture
- Topic: Sensors-as-a-Service for Internet of Things
  Venue: ICACIE, Springer, Bhubaneswar, India / Hybrid: In-Person and Virtual Conference, 2021
  Purpose: Keynote Talk
- Topic: Sensors-as-a-Service for Internet of Things
  Venue: IEEE Globecom, Madrid, Spain / Hybrid: In-Person and Virtual Conference, 2021
  Purpose: IEEE Globecom Tutorial
- Topic: Enabling Sensors-as-a-Service for IoT
  Venue: SCS, SPECTS, Virginia, USA / Hybrid On-line Conference, 2021
  Purpose: SCS SPECTS Tutorial
- Topic: Programmability for Context-Aware Smart IoT Applications
  Venue: IEEE WCNC, Nanjing, China / Hybrid On-line Conference, 2021
  Purpose: IEEE WCNC Tutorial
- Topic: Sensor-cloud for IoT
  Venue: Loughborough University, London, 2017
  Purpose: Indo-UK project meeting and workshop
- Topic: Sensor-cloud
  Venue: Indian Institute of Technology Kharagpur, 2017
  Purpose: A short term course on Architecting Wireless Sensor Networks for Internet of Things

Education

- **Doctor of Philosophy** – January, 2021
  Topic: Service-oriented Sensor-cloud Management for IoT Applications
  Indian Institute of Technology Kharagpur, India
  Supervisor: Prof. Sudip Misra, ***Fellow IEEE, FNAE (India), FNASc (India), FIETE (India), FIET (UK), FR-SPH (UK)***
- **Master of Science** (by Research) – August, 2015
  Topic: Dumb Nodes in Wireless Sensor Networks
  Indian Institute of Technology Kharagpur, India
  Supervisor: Prof. Sudip Misra, ***Fellow IEEE, FNAE (India), FNASc (India), FIETE (India), FIET (UK), FR-SPH (UK)*** and Prof. Debashis Samanta
- **Bachelor of Technology** in Information Technology – April, 2010
  Topic: Cyber Court
  West Bengal University of Technology, West Bengal, India
  Supervisor: Prof. Rajat Subhra Goswami

Research Interests

- Machine Learning for Internet of Things (IoT) Networks
- Wireless Sensor Networks
- Intelligent Sensor-Cloud Architecture

- Cloud and Fog Computing Systems
- Smart Networked Unmanned Aerial Vehicles
- Intelligent Health Care Systems

Achievements

Fellowship/Scholarship

- The **Raman-Charpak Fellowship** (RCF 2018): Awarded the prestigious fellowship (**Only 4 applicants were selected in the Engineering Sciences across India**) to conduct research in a French Research Organization for 3-9 months.
- **Council of Scientific and Industrial Research Fellowship** (**CSIR**): The fellowship was awarded to selected PhD scholar across India to pursue research work during 2017-20.
- **Institute Scheme for Innovative Research and Development (ISIRD) Fellowship**: The fellowship is received in 2013 to work in a research project, at the Indian Institute of Technology Kharagpur, India.
- **Ministry of Human Resource Development** (**MHRD**) **Fellowship**: Received MHRD fellowship in 2011 to work in a research project.

Recognition

- **IEEE TCSC Outstanding Ph.D. Dissertation Award** 2021: Ph.D. Thesis was selected as the outstanding dissertation award by the IEEE Technical Committee on Scalable Computing (TCSC), which is an international forum fostering research and education in Scalable Computing.
- **ICACIE-2020, Springer, Best Paper Award**: Paper titled *QSens: QoS-aware Sensor Node Selection in Sensor-Cloud Architecture*.
- **IEEE Systems Journal Best Paper Award**: Paper titled *MEGAN: Multipurpose Energy-Efficient, Adaptable, and Low-Cost Wireless Sensor Node for the Internet of Things* was recognized as ISJ Best Paper Award. In 2019, only 7 papers were selected by the journal committee for the best paper out of total of 793 papers.
- **Top Downloaded Article 2017-18**: Paper titled *Knowledge Discovery for Enabling Smart Internet of Things: A Survey*, published in Wiley Interdisciplinary Review - Data Mining and Knowledge Discovery was amongst articles published between January 2017 and December 2018, the paper received some of the most downloads in the 12 months. The paper was also recognized as a top 20 most read paper.
- **InSc Young Achiever Award 2019**: The award was received for the research paper *Topology Control for Self-Adaptation in Wireless Sensor Networks with Temporary Connection Impairment*, published in ACM Transactions on Autonomous and Adaptive Systems.
- **Heidelberg Laureate Forum (HLF) 2018**: Selected as one of the **most qualified** young researchers (**among 200 researchers world-wide**) to participate in the 6^{th} HLF and interact with the Nobel Laureates, Abel Prize Awardees, Fields Awardees, ACM A. M. Turing Awardees, ACM Prize Awardees, and Navanlinna Awardees.
- **Dr. Amulya K. N. Reddy Award**: Awarded by the Hari-om Ashram Prerit Society for commercialization of prototype (INR 50,000) developed to address a socially relevant problem in 2018. Only 3-4 awards are granted annually among 25,000 (approx.) entries.
- **Gandhian Young Technological Innovation** (**GYTI**) 2018: Awardee of GYTI for the product Batteryless IoT Sensing Nodes. Award was received from the honorable **President of India**.
- **IBM Day Award**: **Runner-Up** in Demo Presentation for the product Batteryless Sensing in IoT in IBM Day, organized by IBM and IIT Kharagpur, 2016
- **Runner-Up** in Poster Presentation in 6^{th} Research Scholars' Day, organized by the School of Information Technology, Indian Institute of Technology Kharagpur, 2015
- Received **Honorary Certificate of Appreciation** at **IEEE ComSoc Student Competition** "Communications Technology Changing the World", 2014 for being ranked among the top 9 projects worldwide

- Second Runners Up in **Samsung Innovation Award 2014** for the product Big-Sensor-Cloud
- **Outstanding Poster Presentation Award** in 5^{th} Research Scholars' Day, organized by the School of Information Technology, Indian Institute of Technology Kharagpur, 2014
- **Runner-Up** in **National Acron Imagination Competition**

Travel Grant

- Received **full financial assistance** from IIT Kharagpur to present a paper at the *IEEE Conference on Communications* (*IEEE ICC-Workshop*) 2018
- Received **full financial assistance** from IIT Kharagpur to present a paper at the *IEEE Wireless Communications and Networking Conference* (*IEEE WCNC*) 2018
- **Fully funded** to visit the Loughborough University, and City, University of London for attending the project meeting and delivering a talk in 2017 and 2018.
- Received **full financial assistance** from **Microsoft Research (MSR)** for participating in **ACM - MSR Academic Research Summit 2016 and 2017**
- Received **full financial assistance** from IIT Kharagpur to present a paper at the 6^{th} *IEEE International Conference on Cloud Computing Technology and Science* (*IEEE CloudCom*) 2014
- Received **travel grant** from IIT Kharagpur to present a paper at the 11^{th} *IEEE India Conference on Emerging Trends and Innovation in Technology* (*INDICON*) 2014

Media Coverage

- The photograph published in the Telegraph as young innovator in the Gandhiyan Young Technological Innovation on March 20, 2018.
- News item for the development of BHIM appeared in several newspapers (such as the Times of India, India Today, LinkedIn, Zee News) on July, 2017.
- News item for the award on Big-Sensor-Cloud appeared in several media (such as Times of India, Samsung News Room, and the Business Wire India News) on October, 2014.

Positions Served/Membership

Coordinator, E-Cell & Gnan Circle Venture, Indian Institute of Information Technology, Sri City

Area Expert, IEEE ComSoc Technical Committee e-Health SIG on IoT

Editorship

- **Guest Editor**, IoT-based solutions for mitigation of COVID-19 and similar epidemics, **Elsevier Smart Health**
- **Associate Editor**, *Frontiers in the Internet of Things*.

Chair

- **Co-chair**, The 2^{nd} Workshop on Softwarized Next Generation Networks for IoT Services co-located with the **IEEE ICC 2022**.
- **Track Chair**, Communication Networks, Cloud computing and IoT Track, 3^{rd} International Conference on Frontiers in Computing and Systems (**COMSYS**), 2022, Springer
- **Co-chair**, Workshop on AI/ML for Edge/Fog Networks co-located with the **IEEE INFOCOM 2022**.
- **Co-chair**, Workshop on Softwarized Next Generation Networks for IoT Services co-located with the **IEEE GLOBECOM 2021**.

- **Chair (Lead)**, Workshop on Virtualization for Enabling Next-Generation IoT Networks co-located with **IEEE HPSR 2021**.

Host

- **Co-host**, Webinar on **Next-Generation IoT**, IEEE Communication Society Technical Committee on Communications Software: Special Interest Group (SIG) on "NFV and SDN Technologies" on 2021 and 2022
- **Co-host**, Webinar on **Healthcare IoT**, IEEE Communication Society Technical Committee on eHealth: Special Interest Group (SIG) on "IoT for eHealth" and Technical Committee Green Computing and Communications: Special Interest Group on "Pandemics" on 2021 and 2022

TPC and Review

- Technical Program Committee in the 4^{th} **International Conference on Advanced Computing and Intelligent Engineering, Springer**
- Technical Program Committee in the 1^{st} ACM International Workshop on Future Industrial Communication Networks in conjunction with **ACM MobiCom** 2018
- Reviewer in the **IEEE TMC**, the **IEEE TVT**, the **IEEE TGCN**, the **IEEE TSUSC**, the **IEEE IoT J**, the **IEEE Access**, the **IEEE Comm. Lett.**, the **IEEE WCM**, the **IEEE IoT Mag.**, the **IEEE Net. Mag.**, the **PMC., Elsevier**, and the **IET WSS**
- Reviewer in **IEEE Students' Technology Symposium, 2016**
- Reviewer in the **IEEE ANTS 2015 and 2016**, the **IEEE Covi-Com Workshop, Globecom 2016**, **IEEE HCI, 2014**

Others

- **General Secretary-Technology** for Research Scholar Hostel (VSRC), IIT Kharagpur, 2015-2016
- Organizing committee member in **All India Council for Technical Education** sponsored short term course - 2015 on *Internet of Things: Convergence of Sensing, Cloud, and Big-Data Networking*
- Organizing committee member in **Knowledge Dissemination Program - 2015** on *Wireless Sensor Networks & Internet of Things*
- Organizing committee member in **International Summer and Winter Term - 2015** on *Enabling Internet of Things with Cloud and Big Data Networking*
- Program Committee Members in the 14^{th} **IEEE International Conference on Scalable Computing and Communications, 2014**
- Reviewer in **IEEE Students' Technology Symposium, 2014**
- IEEE Member
- ACM Member
- InSc Professional Member

Book

S. Misra, A. Mukherjee, **A. Roy.**,"Introduction to IoT", Cambridge University Press, UK

Patent

[P1] S. Misra, A. Mukherjee, A. Roy, N. Pathak, S. Pal, "End-to-end Containerized Real-time Microservice-based Portable Remote Health Monitoring System", Indian patent filed in 2017 (Ref: 202131029970).

[P2] S. Misra, S. K. Roy, **A. Roy**, S. Kumar, and S. Goswami, "Universal Electronics Circuit Node for Supporting Multiple Heterogeneous Sensors and Actuators Concurrently," Indian patent filed in 2017 (Ref: 201731015829).

[P3] A. Mondal, S. K. Roy, **A. Roy**, and S. Misra, "A Cloud Based Automatized System for On-Demand and Without Service Delay Supply of Energy to End Users," Indian patent filed in 2016 (Ref: 201631007632).

[P4] S. Misra, S. Goswami, P. Kar, and **A. Roy**, "PKI enabled time-stamped digital signing system involving certification authority issued digital certificate cryptographic token with real-time revocation verification," Indian patent filed in 2016 (Ref: 201631001328).

[P5] S. Misra, **A. Roy**, P. Kar, S. Goswami, and T. Ojha, "An adverse environmental effect resistant seamless wireless sensor network system," Indian patent filed in 2015 (Ref: 425/KOL/2015).

[P6] S. Misra, P. Kar, **A. Roy**, S. Goswami, "An advanced wireless sensor Network System and method for accurate information gathering from a radiation affected area," Indian patent filed in 2015 (Ref: 0006/KOL/2015).

[P7] S. Chatterjee, **A. Roy**, S. K. Roy, S. Misra, M. S. Bhogal, R. Daga, "Sensory network for persuasive and pervasive virtualization of physical sensors into renderable time service," Indian patent filed in 2014 (Ref: 1145/KOL/2014).

Publications

Journals

[J1] T. Ghosh, **A. Roy**, S. Misra, "I2M: Intelligent Information Management for Rendering IoE Services in Society 5.0", *IEEE Transactions on Network Science and Engineering*, 2022 (Accepted)

[J2] T. Ghosh, **A. Roy**, S. Misra, "B2H: Enabling Delay-Tolerant Blockchain Network in Healthcare for Society 5.0", *Computer Networks*, *Elsevier*, 2022 (Accepted)

[J3] A. Shukla, N. Ahmed, **A. Roy**, S. C. Misra, "Softwarized Management of 6G Network for Green Internet of Things," *Computer Communications*, *Elsevier*, 2022 (Accepted), DOI: https://doi.org/10.1016/j.comcom.2022.01.018

[J4] N. A. Singh, **A. Roy**, and S. Misra, "Edge Intelligence for Rendering Green Camera-Network-as-a-Service", *IEEE Transactions on Green Communications and Networking*, vol. 6, no. 1, pp. 365 - 375, 2021

[J5] T. Ghosh, R. Saha, **A. Roy**, S. Misra, N. S. Raghuwanshi, "AI-based Communication-as-a-Service for Network Management in Society 5.0", *IEEE Transactions on Network and Service Management*, 2021 (Accepted)

[J6] T. Ghosh, **A. Roy**, S. Misra, N. S. Raghuwanshi, "CASE: Context-Aware Security Scheme for Preserving Data Privacy in IoT-enabled Society 5.0", *IEEE Internet of Things Journal*, 2021 (Accepted), DOI: 10.1109/JIOT.2021
.3101115

[J7] **A. Roy**, S. Misra, S. Bandyopadhyay, A. Jamalipour, "Mobile Sensor-Cloud for Rendering Sensors-as-a-Service", *IEEE Systems Journal*, 2021 (Accepted), DOI: 10.1109/JSYST.2021.3091585 [Publication from Ph.D. Thesis]

[J8] P. Deb, C. Roy, **A. Roy**, S. Misra,"DEFT: Decentralized Multiuser Computation Offloading in a Fog-Enabled IoV Environment", *IEEE Transactions on Vehicular Technology*, vol. 69, no. 12, pp. 15978-15987, 2020

[J9] S. Misra, A. Mukherjee, **A. Roy**, N. Saurabh, Y. Rahulamathavan, R. Muttukrishnan, "Blockchain at the Edge: Performance of Resource-Constrained IoT Networks," *IEEE Transactions on Parallel and Distributed Systems*, Vol. 32, No. 1, pp. 174-183, 2020.

[J10] **A. Roy**, S. Misra, and F. Nait-Abdesselam, "Range-Price Trade-off in Sensor-cloud for Provisioning Sensors-as-a-Service", *IEEE Transactions of Cloud Computing*, 2020 (Accepted), DOI: 10.1109/TCC.2020.3030851 [Publication from Ph.D. Thesis]

[J11] **A. Roy**, S. Misra, and S. Nag, "PRIME: An Optimal Pricing Scheme for Mobile Sensors-as-a-Service," *IEEE Transactions of Mobile Computing*, 2020 (Accepted), DOI: 10.1109/TMC.2020.3023885 [Publication from Ph.D. Thesis]

[J12] S. Misra, **A. Roy**, C. Roy, A. Mukherjee, "DROPS: Dynamic Radio Protocol Selection for Energy-Constrained Wearable IoT Healthcare," *IEEE Journal on Selected Areas in Communications*, Vol. 39, No. 2, pp. 338 - 345, 2021

[J13] N. Pathak, S. Misra, A. Mukherjee, **A. Roy** and A. Zomaya, "UAV Virtualization for Enabling Heterogeneous and Persistent UAV-as-a-Service," *IEEE Transactions on Vehicular Technology*, Vol. 69, No. 6, pp. 6731 - 6738, 2020

[J14] **A. Roy**, A. Mondal, S. Misra, and M. S. Obaidat, "ORCID: Opportunistic Re-Connectivity for Network Management in the Presence of Dumb Nodes in Wireless Sensor Networks," *IEEE Systems Journal*, Vol. 14, No. 1, pp. 9 - 16, 2019.

[J15] **A. Roy**, S. Misra, and P. Dutta, "Dynamic Pricing for Sensor-Cloud Platform in the Presence of Dumb Nodes," *IEEE Transactions of Cloud Computing* 2019 (Accepted), DoI: 10.1109/TCC.2019.2950396 [Publication from Ph.D. Thesis].

[J16] S. Misra, S. Roy, **A. Roy**, M. S. Obaidat, and A. Jha, "MEGAN: Multipurpose Energy-Efficient, Adaptable, and Low-Cost Wireless Sensor Node for the Internet of Things," *IEEE Systems Journal* Vol. 14, No. 1, pp. 144 - 151, 2019. (**IEEE Systems Journal Best Paper Award 2020**).

[J17] S. Chatterjee, **A. Roy**, S. Roy, S. Misra, M. Bhogal, and R. Daga, "Big-Sensor-Cloud Infrastructure: A Holistic Prototype for Provisioning Sensors-as-a-Service," *IEEE Transactions of Cloud Computing* Vol. 9, No. 4, pp. 1323 - 1334, 2019

[J18] A. Chakraborty, A, Mondal, **A. Roy**, and S. Misra, "Dynamic Trust Enforcing Pricing Scheme for Sensors-as-a-Service in Sensor-Cloud Infrastructure," *IEEE Transactions of Services Computing*, Vol. 14, No. 5, pp. 1345 - 1356, 2018

[J19] S. Misra, A. Mukherjee, and **A. Roy**, "Knowledge discovery for enabling smart Internet of Things: A survey," *Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery*, Vol. 8, No. 6, 2018 (**Selected among top 20 most read paper in 2017-18**).

[J20] C. Roy, **A. Roy**, S. Misra, and J. Maiti, "Safe-aaS: Decision Virtualization for Effecting Safety-as-a-Service," *IEEE Internet of Things Journal*, Vol. 5, No. 3, pp. 1690 - 1697, 2018.

[J21] **A. Roy**, S. Misra, P. Kar, and A. Mondal, "Topology Control for Self-Adaptation in Wireless Sensor Networks with Temporary Connection Impairment," *ACM Transactions on Autonomous and Adaptive Systems*, Vol. 11, No. 4, pp. 1 - 34, 2016.

[J22] P. Kar, **A. Roy**, and S. Misra, "On the Effects of Communication Range Shrinkage of Sensor Nodes in Mobile Wireless Sensor Networks Due to Adverse Environmental Conditions," *IEEE Systems Journal*, Vol. 12, No. 3, pp. 2048 - 2055, 2016.

[J23] P. Kar, **A. Roy**, and S. Misra, "Connectivity Re-establishment in Self-organizing Sensor Networks with Dumb Nodes," *ACM Transactions on Autonomous and Adaptive Systems*, Vol. 10, No. 4, pp. 1-30, 2016.

[J24] **A. Roy**, P. Kar, S. Misra, and M. S. Obaidat, "D3: Distributed Approach for the Detection of Dumb Nodes in Wireless Sensor Networks," *International Journal of Communication Systems (Wiley)*, Vol. 30, No. 1, pp. 3916-3924, 2015.

[J25] S. Misra, P. Kar, **A. Roy**, and M. S. Obaidat, "Existence of Dumb Nodes in Stationary Wireless Sensor Networks," *Journal of Systems and Software (Elsevier)*, 91:135–146, 2014.

Conferences

[C1] **A. Roy**, P. Bouvry "Opti-U: Optimal UAV Selection for Enabling UAV-as-a-Service," in the *IEEE International Conference on Communications* (*ICC*), Seoul, South Korea, 2022 (Accepted).

[C2] T. Ghosh, **A. Roy**, S. Misra, P. Bouvry "ServEx: Service Exchange Among Multiple SCSPs in Sensor-Cloud for IoT Applications," in the *IEEE Global Communications Conference* (*GLOBECOM*), Madrid, Spain, 2021 (Accepted).

[C3] N Ahmed, **A. Roy**, A. Mondal S. Misra, "SDN-Based Link Recovery Scheme for Large-Scale Internet of Things," in the 22^{nd} *IEEE International Conference on High-Performance Switching and Routing* (*HPSR*), Paris, France, 2021 (Accepted) [Invited Paper].

[C4] M. Shenoy, **A. Roy**, S. Misra, "QoI-Aware Camera Network-as-a-Service for Social Behavior Analysis," in the *IEEE International Conference on Communications* (*ICC*), Montreal, Canada, 2021 (Accepted).

[C5] N. Ahmed, **A. Roy**, S. Misra, D. Tandur "Programmable IEEE 802.11ah Network for Internet of Things," in the *IEEE International Conference on Communications* (*ICC*), Montreal, Canada, 2021 (Accepted).

[C6] N. A. Singh, **A. Roy**, and S. Misra, "OptiCam: Optimal Camera Selection for Provisioning Camera-Network-as-a-Service," *IEEE Global Communications Conference* (*GLOBECOM*), Taipei, Taiwan, 2020 (Accepted).

[C7] **A. Roy**, S. Misra, and A. Kotasthane: "QSens: QoS-aware Sensor Node Selection in Sensor-Cloud Architecture," *International Conference on Advanced Computing and Intelligent Engineering* (*ICACIE*), Springer, Mauritius, Africa, 2020 (**Best Paper Award**).

[C8] **A. Roy**, S. Misra, and Lakshay: "OPTIVE: Optimal Configuration of Virtual Sensor in Mobile Sensor-cloud," *IEEE Wireless Communications and Networking Conference (WCNC)*, Morocco, North Africa, 2019.

[C9] **A. Roy**, C. Roy, S. Misra, Y. Rahulamathavan, and M. Rajarajan: "CARE: Criticality-Aware Data Transmission in CPS-based Healthcare Systems," *IEEE International Workshop on Communication, Computing, and Networking in Cyber-Physical Systems (CCNCPS), colocated with IEEE International Conference on Communications (ICC)*, Kansas City, MO, 2018.

[C10] C. Roy, **A. Roy**, and S. Misra, "DIVISOR: Dynamic Virtual Sensor Formation for Overlapping Region in IoT-based Sensor-Cloud," *IEEE Wireless Communications and Networking Conference (WCNC)*, Barcelona, Spain, 2018 [Publication from Ph.D. Thesis].

[C11] **A. Roy**, S. Misra, and S Ghosh, "QoS-Aware Dynamic Caching for Destroyed Virtual Machines in Sensor-Cloud Architecture," *ACM International Conference on Distributed Computing and Networking*, Varanasi, India, 2018 [Invited Paper] [Publication from Ph.D. Thesis].

[C12] S. K. Roy, **A. Roy**, S. Misra, N. S. Raghuwanshi, and M. S. Obaidat, "AID: A Prototype for Agricultural Intrusion Detection Using Wireless Sensor Network," *IEEE International Conference on Communications (ICC)*, pp. 7059-7064, London, 2015.

[C13] P. Kar, **A. Roy**, S. Misra, and Mohammad S. Obaidat, "Energy-Efficient Topology Reconstruction of WSN in Presence of Dumb Nodes," in *the* 4^{th} *IEEE International Workshop on Smart Communication Protocols and Algorithms (SCPA), colocated with IEEE International Conference on Communications (ICC)*, pp. 1485-1490, London, 2015.

[C14] **A. Roy**, P. Kar, S. Misra, "Detection of Dumb Nodes in a Stationary Wireless Sensor Network," in *the* 11^{th} *IEEE India Conference (INDICON)*, pp. 1-6, Pune, India, 2014.

[C15] **A. Roy**, A. Mondal, S. Misra, "Connectivity Re-establishment in the Presence of Dumb Nodes in Sensor-Cloud Infrastructure: A Game-Theoretic Approach," in *the* 6^{th} *IEEE International Conference on Cloud Computing Technology and Science (CloudCom)*, pp. 847-852, NTU, Singapore, 2014.

Magazine Articles

[M1] Simulate a Network Using NS-2 by **Arijit Roy** and Pushpendu Kar, PCQuest, August 2012.

[M2] Popular Applications of Wireless Sensor Networks by **Arijit Roy**, Pushpendu Kar and Sumit Goswami, PCQuest, December 2012.

[M3] Undersea Colony by Pushpendu Kar, **Arijit Roy**, and Sumit Goswami, PCQuest, November 2013.

References

- **Dr. Sudip Misra**
  PhD (Carleton U, Canada), Humboldt Fellow (Germany),
  FIEEE, FNAE (India), FNASc (India), FIETE (India), FIET (UK), FRSPH (UK)
  ACM Distinguished Member
  IEEE Communications Society (ComSoc) Distinguished Lecturer
  Professor & Abdul Kalam Technology Innovation National Fellow,
  Department of Computer Science and Engineering,
  Indian Institute of Technology Kharagpur,
  Kharagpur, West Bengal, India, 721302
  Editor, *IEEE Transactions on Vehicular Technology*
  Associate Editor, *IEEE Transactions on Mobile Computing*
  Associate Editor, *IEEE Transactions on Sustainable Computing*
  Associate Editor, *IEEE Systems Journal*
  Associate Editor, *IEEE Network*

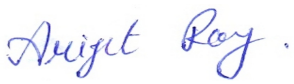
  E-mail: smisra@cse.iitkgp.ernet.in / sudipm@iitkgp.ac.in
  Phone: +91-9734880277 / +91-9474174155

- **Dr Yogachandran Rahulamathavan**
  PhD (UK), BEng (Hons),
  MIEEE, MIET, Fellow of HEA,
  Program Director for MSc Cybersecurity and Big Data,
  Lecturer in Cyber Security and Privacy,
  Institute for Digital Technologies,
  Loughborough University London
  3 Lesney Avenue, The Broadcast Centre,
  Queen Elizabeth Olympic Park, London E15 2GZ,
  Associate Editor, *IEEE Access*

  Email: Y.Rahulamathavan@lboro.ac.uk
  Phone: 02038235677

- **Prof. Farid Nait-Abdesselam**, Ph.D.
  Department of Computer Science Electrical Engineering
  School of Computing and Engineering, University of Missouri Kansas City
  570B Flarsheim Hall, 5110 Rockhill Road, Kansas City, MO 64110

  Email: naf@umkc.edu
  Phone: 816-235-2335



Sri City
Date: 23-09-2022