

# Dr. Ayan Mondal

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Assistant Professor  
Department of Computer Science and Engineering  
Indian Institute of Technology Indore  
Khandwa Road, Simrol, Indore 453552, India

## Education

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*Doctor of Philosophy* 2020  
TCS PhD Research Fellow (India)  
Department of Computer Science and Engineering  
Indian Institute of Technology Kharagpur, India  
Thesis: *Traffic Engineering in Software-Defined Data Center Networks for IoT*

*Master of Science (by Research)* 2015  
School of Information Technology  
Indian Institute of Technology Kharagpur, India  
Thesis: *Distributed Energy Management in Smart Grid*  
Supervisor: Professor Sudip Misra

*Bachelor of Technology* 2012  
Electronics and Communication Engineering  
St. Thomas' College of Engineering and Technology  
West Bengal University of Technology, India

*Higher Secondary* 2008  
Pure Science  
West Bengal Council of Higher Secondary Education, India

*Secondary* 2006  
West Bengal Board of Secondary Education, India

## Professional Experience

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*Distributed Stream processing on Fog and Edge Systems via Transprecise Computing* October 2020 - Present  
(Postdoctoral Researcher)  
Univ Rennes, Inria, CNRS, IRISA  
Rennes, France  
Sponsored by: European Union  
Supervisor: Professor Guillaume Pierre

FogCity: QoS-Aware Resource Management for Smart Cities  
Inria, CNRS, IRISA  
Rennes, France  
Sponsored by: IFCPAR/CEFIPRA

June 2019 - September 2019  
(Visiting Researcher)

An Indigenous Framework for Authenticity Integrity and Non-Repudiation  
in Data Communication  
Sponsored Research and Industrial Consultancy  
Indian Institute of Technology Kharagpur, India  
Sponsored by: DRDO, India

February 2016  
(Senior Research Fellow)

Development of feasibility assessment model for adaptation of underground  
coal gasification technology in the North-East Region of India  
Sponsored Research and Industrial Consultancy  
Indian Institute of Technology Kharagpur, India Sponsored by: DietY, India

August 2014 – January 2016  
(Senior Project Officer)

Development of feasibility assessment model for adaptation of underground  
coal gasification technology in the North-East Region of India  
Sponsored Research and Industrial Consultancy  
Indian Institute of Technology Kharagpur, India Sponsored by: DietY, India

August 2013 – July 2014  
(Junior Project Officer)

Development of feasibility assessment model for adaptation of underground  
coal gasification technology in the North-East Region of India  
Sponsored Research and Industrial Consultancy  
Indian Institute of Technology Kharagpur, India Sponsored by: DietY, India

August 2012 – July 2013  
(Junior Project Assistant)

## Research Interests

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- Internet of Things (IoT)
- Software-Defined Network (SDN)
- Software-Defined DCN (SD-DCN)
- Sensor-Cloud
- Fog/Edge Networks
- Game Theory Applications
- Smart Grid Communication
- Smart Grid Energy Management
- Wireless Sensor Networks (WSNs)

## Publications

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### Journals

- [J22] P. K. Deb, **A. Mondal**, and S. Misra, “AuGrid: Edge-Enabled Distributed Load Management for Smart Grid Service Providers,” *IEEE Transactions on Green Communications and Networking*, pp. 1-10, October 2021. DOI: 10.1109/TGCN.2021.3121877
- [J21] **A. Mondal**, S. Misra, and A. Chakraborty, “Dynamic Price-Enabled Strategic Energy Management Scheme in Cloud-Enabled Smart Grid,” *IEEE Transactions on Cloud Computing*, Early Access, pp. 1-12, September 2021. DOI: 10.1109/TCC.2021.3118637
- [J20] S. C. Misra and **A. Mondal**, “FogPrime: Dynamic Pricing-Based Strategic Resource Management in Fog Networks,” *IEEE Transactions on Vehicular Technology*, vol. 70, no. 8, pp. 8227-8236, July 2021. DOI: 10.1109/TVT.2021.3096149
- [J19] S. Misra, **A. Mondal**, P. V. S. Kumar, and S. K. Pal, “SEED: QoS-Aware Sustainable Energy Distribution in Smart Grid,” *IEEE Transactions on Sustainable Computing*, Early Access, pp.1-11, January 2021. DOI: 10.1109/TSUSC.2021.3049132

- [J18] A. Chakraborty, S. Misra, and **A. Mondal**, “QoS-Aware Dynamic Cost Management Scheme for Sensors-as-a-Service,” *IEEE Transactions on Services Computing*, Early Access, pp. 1-12, July 2020. DOI: 10.1109/TSC.2020.3011495
- [J17] S. Misra, **A. Mondal**, P. Bhavathankar, and M.-S. Alouini, “M-JAW: Mobility-Based Jamming Avoidance in Wireless Sensor Networks,” *IEEE Transactions on Vehicular Technology*, vol. 69, no. 5, pp. 5381-5390, May 2020. DOI: 10.1109/TVT.2020.2982966
- [J16] **A. Mondal** and S. Misra, “FlowMan: QoS-Aware Dynamic Data Flow Management in Software-Defined Networks,” *IEEE Journal on Selected Areas in Communications*, vol. 38, no. 7, pp. 1366-1373, July 2020. DOI: 10.1109/JSAC.2020.2999682
- [J15] 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, March 2020. DOI: 10.1109/JSYST.2019.2956324
- [J14] **A. Mondal**, S. Misra, and I. Maity, “AMOPE: Performance Analysis of OpenFlow Systems in Software-Defined Networks,” *IEEE Systems Journal*, vol. 14, no. 1, pp. 124-131, March 2020. DOI: 10.1109/JSYST.2019.2912843
- [J13] S. Misra, **A. Mondal**, and S. Khajjayam, “Dynamic Big-Data Broadcast in Fat-Tree Data Center Networks with Mobile IoT Devices,” *IEEE Systems Journal*, vol. 13, no. 3, pp. 2898-2905, September 2019. DOI: 10.1109/JSYST.2019.2899754
- [J12] I. Maity, **A. Mondal**, S. Misra, and C. Mandal, “Tensor-Based Rule-Space Management System in SDN,” *IEEE Systems Journal*, vol. 13, no. 4, pp. 3921-3928, December 2019. DOI: 10.1109/JSYST.2018.2879321
- [J11] 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 on Services Computing*, vol. 14, no. 5, pp. 1345-1356, September 2021. DOI: 10.1109/TSC.2018.2873763
- [J10] I. Maity, **A. Mondal**, S. Misra, and C. Mandal, “CURE: Consistent Update with Redundancy Reduction in SDN,” *IEEE Transactions on Communications*, vol. 66, no. 9, pp. 3974-3981, September 2018. DOI: 10.1109/TCOMM.2018.2825425
- [J9] **A. Mondal**, S. Misra, and I. Maity, “Buffer Size Evaluation of OpenFlow Systems in Software-Defined Networks,” *IEEE Systems Journal*, vol. 13, no. 2, pp. 1359-1366, June 2019. DOI: 10.1109/JSYST.2018.2820745
- [J8] **A. Mondal**, S. Misra, L. S. Patel, S. K. Pal and M. S. Obaidat, “DEMANDS: Distributed Energy Management Using Non-cooperative Scheduling in Smart Grid,” *IEEE Systems Journal*, Vol. 12, no. 3, pp. 2645-2653, September 2018. DOI: 10.1109/JSYST.2017.2723961
- [J7] P. Bhavathankar, **A. Mondal**, and S. Misra, “Topology Control in the Presence of Jammers for Wireless Sensor Networks,” *International Journal of Communication Systems*, Vol. 30, no. 13, pp. 1-11, January 2017. DOI: 10.1002/dac.3289
- [J6] 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. 21:1-21:34, January 2017. DOI: 10.1145/2979680
- [J5] **A. Mondal**, S. Misra, and Mohammad S. Obaidat, “Distributed Home Energy Management System with Storage in Smart Grid Using Game Theory,” *IEEE Systems Journal*, vol. 11, no. 3, pp. 1857-1866, September 2017. DOI: 10.1109/JSYST.2015.2421941
- [J4] **A. Mondal** and S. Misra, “Game-Theoretic Energy Trading Network Topology Control for Electric Vehicles in Mobile Smart Grid,” *IET Networks*, vol. 4, no. 4, pp. 220-228, July 2015. DOI: 10.1049/iet-net.2014.0089
- [J3] S. Misra, T. Ojha, and **A. Mondal**, “Game-theoretic Topology Control for Opportunistic Localization in Sparse Underwater Sensor Networks,” *IEEE Transactions on Mobile Computing*, vol. 14, no. 5, pp. 990-1003, July 2014. DOI: 10.1109/TMC.2014.2338293
- [J2] S. Misra, G. Mali, and **A. Mondal**, “Distributed Topology Management for Wireless Multimedia Sensor Networks: Exploiting Connectivity and Cooperation,” *International Journal of Communication Systems*, vol. 27, no. 3, pp. 1367-1387, March 2014. DOI: 10.1002/dac.2770

- [J1] S. Misra, S. Bera, **A. Mondal**, R. Tirkey, H.-C. Chao, S. Chattopadhyay, “Optimal Gateway Selection in Sensor-Cloud Framework for Health Monitoring,” *IET Wireless Sensor Systems*, vol. 3, no. 4, pp. 61-68, December 2013. DOI: 10.1049/iet-wss.2013.0073

## **Conferences**

- [C15] N. Ahmed, A. Roy, **A. Mondal**, and S. Misra, “SDN-Based Link Recovery Scheme for Large-Scale Internet of Things”, in *Proceedings of IEEE International Conference on High Performance Switching and Routing (HPSR)*, Paris, France, June 2021, pp. 1-6. DOI: 10.1109/HPSR52026.2021.9481842 (**Invited Paper**)
- [C14] **A. Mondal** and S. Misra, “BIND: Blockchain-Based Flow-Table Partitioning in Distributed Multi-Tenant Software-Defined Networks”, in *Proceedings of IEEE International Conference on Computer Communications Workshops (INFOCOM Workshops)*, Toronto, Canada, July 2020, pp. 1-6. DOI: 10.1109/INFOCOMWKSHPS50562.2020.9162868
- [C13] A. Chakraborty, S. Misra, **A. Mondal**, and Mohammad S. Obaidat, “SensOrch: QoS-Aware Resource Orchestration for Provisioning Sensors-as-a-Service”, in *Proceedings of IEEE International Conference on Communications (ICC)*, Dublin, Ireland, June 2020, pp. 1-6. DOI: 10.1109/ICC40277.2020.9148621
- [C12] S. Misra, **A. Mondal**, and P. Kumar, “D2M: Mobility-Aware Dynamic Data Multicasting in Software-Defined Data Center Networks”, in *Proceedings of IEEE International Conference on Communications Workshops (ICC Workshops)*, Shanghai, China, March 2019, pp. 1-6. DOI: 10.1109/ICCW.2019.8756718 (**Hot Topic Paper Award**)
- [C11] S. Misra, A. Mondal, and **A. Mondal**, “DATUM: Dynamic Topology Control for Underwater Wireless Multimedia Sensor Networks”, in *Proceedings of IEEE Wireless Communications and Networking Conference (WCNC)*, Marrakech, Morocco, December 2019, pp. 1-6. DOI: 10.1109/WCNC.2019.8885632
- [C10] **A. Mondal**, S. Misra, and A. Chakraborty, “TROD: Throughput-Optimal Dynamic Data Traffic Management in Software-Defined Networks”, in *Proceedings of IEEE Global Communications Conference Workshops (GLOBECOM Workshops)*, Abu Dhabi, UAE, December 2018, pp. 1-6. DOI: 10.1109/GLOCOMW.2018.8644398
- [C9] **A. Mondal** and S. Misra, “Dynamic Micro-Grid Selection by Plug-In Electric Vehicles in Smart Grid: An Evolutionary Game”, in *Proceedings of IEEE Wireless Communications and Networking Conference (WCNC)*, Barcelona, Catalonia, Spain, April 2018, pp. 1-2.
- [C8] A. Chakraborty, **A. Mondal**, and S. Misra, “Cache-Enabled Sensor-Cloud: The Economic Facet”, in *Proceedings of IEEE Wireless Communications and Networking Conference (WCNC)*, Barcelona, Catalonia, Spain, April 2018, pp. 1-6. DOI: 10.1109/WCNC.2018.8377069
- [C7] **A. Mondal** and S. Misra, “DCoE: Game-Theoretic Dynamic Coalition Extension with Micro-Grid Failure in Smart Grid”, in *Proceedings of IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS)*, Bhubaneswar, India, December 2017, pp. 1-6. DOI: 10.1109/ANTS.2017.8384118
- [C6] **A. Mondal** and S. Misra, “Game-theoretic Green Electric Vehicle Energy Networks Management in Smart Grid”, in *Proceedings of IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS)*, Kolkata, India, December 2015, pp. 1-6. DOI: 10.1109/ANTS.2015.7413616
- [C5] **A. Mondal** and S. Misra, “Dynamic Data Aggregator Unit Selection in Smart Grid: An Evolutionary Game Theoretic Approach”, in *Proceedings of the 11th IEEE India Conference on Emerging Trends and Innovation in Technology (INDICON)*, Pune, India, December 2014, pp. 1-6. DOI: 10.1109/INDICON.2014.7030614
- [C4] **A. Mondal** and S. Misra, “Game-Theoretic Distributed Virtual Energy Cloud Topology Control for Mobile Smart Grid”, in *Proceedings of the 6th IEEE International Conference on Cloud Computing Technology and Science (CloudCom)*, Singapore, December 2014, pp. 54-61. DOI: 10.1109/CloudCom.2014.83
- [C3] A. Roy, **A. Mondal**, and S. Misra, “Connectivity Re-establishment in the Presence of Dumb Nodes in Sensor-Cloud Infrastructure: A Game Theoretic Approach”, in *Proceedings of International Conference on Cloud Computing Technology and Science Workshops (CloudCom Workshops)*, Singapore, December 2014, pp. 847-852. DOI: 10.1109/CloudCom.2014.121

- [C2] S. Misra, **A. Mondal**, S. Banik, M. Khatua, S. Bera, and Mohammad S. Obaidat, “Residential Energy Management in Smart Grid: A Markov Decision Process-Based Approach”, in *Proceedings of IEEE International Conference on Internet of Things (iThings)*, Beijing, China, August 2013, pp. 1152-1157. DOI: 10.1109/GreenCom-iThings-CPSCCom.2013.200
- [C1] **A. Mondal** and S. Misra, “Dynamic Coalition Formation in a Smart Grid: A Game Theoretic Approach”, in *Proceedings of IEEE International Conference on Communications Workshops (ICC Workshops)*, Budapest, Hungary, June 2013, pp. 1067-1071. DOI: 10.1109/ICCW.2013.6649395

## **Book Chapter**

- [BC1] **A. Mondal** and S. Misra, “QoS-Aware Dynamic Flow Management in Software-Defined Data Center Networks,” *Software-Defined Internet of Everything*, G. S. Aujla, S. Garg, K. Kaur, and B. Sikdar (Eds.), Internet of Things - Technology, Communications and Computing (Series), Springer International Publishing, Springer Nature, 2021 (Accepted)

## **Patent**

- [P1] **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*, File No. 201631007632, Date March 4, 2016.

## **Teaching Experience**

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### **Teaching Assistant**

<i>Software Engineering Lab (CS29006)</i>	January – July, 2020
Department of Computer Science and Engineering	January – July, 2019
Indian Institute of Technology Kharagpur	January – July, 2018
<i>Programming and Data Structures Lab (CS19001)</i>	July – December, 2018
Department of Computer Science and Engineering	January – June, 2017
Indian Institute of Technology Kharagpur	
<i>Wireless Ad-Hoc and Sensor Networks (IT60119)</i>	July – December, 2017
Department of Computer Science and Engineering	July – December, 2016
Indian Institute of Technology Kharagpur	
<i>Internet and Web-based Technologies (IT60102)</i>	January – May, 2016
Department of Computer Science and Engineering	
Indian Institute of Technology Kharagpur	
<i>Underwater Sensor Networks: Theory and Simulations</i>	April 2016
Short-term Course	
NPOL, DRDO	

## **Supervision and Mentorship Experience**

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*All the following students were under direct supervision of Professor Sudip Misra.*

### **Doctoral Candidate**

Dr. Prasenjit Bhavathankar, <i>Department of Computer Science and Engineering</i>	2015-2017
Indian Institute of Technology Kharagpur	
Topic: <i>Jamming-Aware QoS Enhancement in Wireless Sensor Networks</i>	

Dr. Ilora Maity, <i>Department of Computer Science and Engineering</i> Indian Institute of Technology Kharagpur Topic: <i>Towards Scalable SDN: Enhancement in Data and Control Planes</i>	2015-2017
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### **Master of Science (by Research) Student**

Aishwariya Chakraborty, <i>Department of Computer Science and Engineering</i> Indian Institute of Technology Kharagpur Topic: <i>QoS-Aware Sensor-as-a-Service in Sensor-Cloud</i>	2016-2018
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### **Master of Technology Students**

Lakshmi S. Patel, <i>School of Information Technology</i> Indian Institute of Technology Kharagpur Topic: <i>Energy Management in Smart Grid</i>	2013-2014
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Shukla Banik, <i>School of Information Technology</i> Indian Institute of Technology Kharagpur Topic: <i>Energy Management in Smart Grid</i>	2012-2013
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Reena Tirkey, <i>School of Information Technology</i> Indian Institute of Technology Kharagpur Topic: <i>Gateway Selection in Sensor-Cloud</i>	2012-2013
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### **Undergraduate Interns**

Argha Boksi, <i>Department of Computer Science and Engineering</i> National Institute of Technology Durgapur Topic: <i>Smart Grid Communication</i>	2018-2019
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Pankaj Kumar, <i>Department of Computer Science and Engineering</i> National Institute of Technology Patna Topic: <i>Software-Defined Data Center Networks for IoT</i>	2017-2018
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Swetha Khajjayam, <i>Department of Computer Science and Engineering</i> National Institute of Technology Durgapur Topic: <i>Software-Defined Data Center Networks for IoT</i>	2016-2017
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P. V. Sudheer Kumar, <i>Department of Computer Science and Engineering</i> National Institute of Technology Durgapur Topic: <i>Distributed Energy Management in Smart Grid</i>	2015-2016
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Abhishek Basu, <i>Department of Computer Science and Engineering</i> NRCC Institute of Information Technology, West Bengal University of Technology Topic: <i>Energy Management in Smart Grid</i>	2014-2015
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Suman Kumar Ghosh, <i>Department of Computer Science and Engineering</i> NRCC Institute of Information Technology, West Bengal University of Technology Topic: <i>Energy Management in Smart Grid</i>	2014-2015
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### **Conference Chairmanship**

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<i>SIGNIS: Softwarized Next Generation Networks for IoT Services</i> Co-located with <i>IEEE GLOBECOM 2021</i> Madrid, Spain, December 7-11, 2021	Workshop Chair
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VNI: Virtualization for Enabling Next-Generation IoT Networks  
Co-located with *IEEE HPSR* 2021  
Paris, France, June 7-9, 2021

Workshop Chair

*International Conference on Advanced Computing and Intelligent Engineering*  
(ICACIE) 2018 (Springer)  
Siksha 'O' Anusandhan (Deemed to be University)  
Bhubaneswar, India, December 22-24, 2018

Session Chair

*IEEE Students' Technology Symposium (TechSym) 2016*  
Indian Institute of Technology Kharagpur, India  
September 30 – October 2, 2016

Track Co-Chair

## Host/Co-Host

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*Webinar Series on SDN/NFV*  
*Jointly Organized by:*  
IEEE Communication Society  
Technical Committee on Communications Software:  
Special Interest Group on “NFV and SDN Technologies”  
First Episode: November 15, 2021

Co-Host

*Webinar Series on Healthcare IoT*  
*Jointly Organized by:*  
IEEE Communication Society  
Technical Committee on eHealth: Special Interest Group on “IoT for eHealth” and  
Technical Committee Green Computing and Communications: Special Interest Group on “Pandemics”  
First Episode: September 11, 2021  
Second Episode: November 2, 2021

Co-Host

## Invited/Delivered Talk

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*International Conference on Advanced Computing and Intelligent Engineering (ICACIE) 2020 (Springer)*  
Topic: *Traffic Management in Software-Defined Data Center Networks for IoT*  
Université des Mascareignes (UdM), Mauritius  
June 25-27, 2020

*Internet of Things: Theory & Applications*  
TEQIP-III Course  
Topic: *Software-Defined Networks for IoT*  
Indian Institute of Technology Kharagpur, India  
October 24-28, 2018

*Internet of Things: Convergence of Sensing, Cloud and Big-Data Networking*  
AICTE/QIP Sponsored Short-term course  
Topic: *IoT for Enabling Smart Grid*  
Indian Institute of Technology Kharagpur, India  
July 13-26, 2015

## Memberships

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Association for Computing Machinery (ACM)

Professional Member (S'13-M'21)

Institute of Electrical and Electronics Engineers (IEEE)  
IEEE Communications Society  
IEEE Computer Society  
IEEE Information Theory Society  
IEEE Young Professionals

Member (S'13-M'21)

## Referee Services

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IEEE Journal on Journal on Selected Areas in Communications (IEEE JSAC); IEEE Transactions on Smart Grid (IEEE TSG); IEEE Transactions on Communications (IEEE TCOM); IEEE Transactions on Vehicular Technology (IEEE TVT); IEEE Transactions on Mobile Computing (IEEE TMC); IEEE Transactions on Sustainable Energy (IEEE TSST); IEEE Systems Journal; IEEE Communications Magazine; Pervasive and Mobile Computing Journal (PMC) (Elsevier); IET Networks; IET Generation; IET Wireless Sensor Systems; Transmission & Distribution; International Journal of Communication Systems (Wiley); Wireless Communications and Mobile Computing (WCMC) (Wiley); International Journal of Communication Networks and Distributed Systems (Springer); IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS) 2016; IEEE Students' Technology Symposium (TechSym) 2016; IEEE TechSym 2014

## TPC Member

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IEEE International Conference on Communications (ICC) 2021; IEEE Students' Technology Symposium (TechSym) 2016; International Conference on Solar Energy & Building (ICSoEB) 2015; International Conference on Engineering & Computational Innovation Sciences (ENCINS) 2015; World Symposium on Mechatronics Engineering & Applied Physics (WSMEAP) 2015; Global Summit on Computer & Information Technology (GSCIT) 2015; International Conference on Single Processing & Data Mining (ICSPDM) 2015; Advancement on Mechanical and Manufacturing Engineering Technology (ADMMET) 2015

## Awards/Honours Received

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- Recipient of the **HoT Topic Paper Award** in the 2<sup>nd</sup> Secure and Dependable Software Defined Networking for Sustainable Smart Communities (SecSDN) in conjunction with IEEE International Conference on Communications (ICC) 2019 for the paper entitled "D2M: Mobility-Aware Dynamic Data Multicasting in Software-Defined Data Center Networks".
- Recipient of the **Tata Consultancy Services (TCS) Fellowship**, 2015-2019.
- **Ranked 3<sup>rd</sup> and 49<sup>th</sup>** in *Secondary Examination* from District - North 24 Parganas, West Bengal, India and State - West Bengal, India, respectively.
- Recipient of the **Merit scholarship** by Department of Higher Education, Ministry of Human Resource Development, Government of India based on performance in Higher Secondary Examination.
- Recipient of the **Merit scholarship** by Department of Higher Education, Ministry of Human Resource Development, Government of India for exemplary performance in Secondary Examination.
- **Winner** in *Poster presentation* on the 6<sup>th</sup> Research Scholars' Day 2015 of School of Information Technology, IIT Kharagpur.
- Recipient of the **Institute (IIT Kharagpur) Full Financial Grant** for presenting paper in the IEEE International Conference on Communications (ICC), Shanghai, China, March 2019.
- Recipient of the **Institute (IIT Kharagpur) Travel Grant** for presenting paper in the IEEE Global Communications Conference (GLOBECOM), Abu Dhabi, UAE, December 2018.



- Recipient of the **TCS** (Tata Consultancy Services) **Research Travel Grant** for presenting poster in the IEEE Wireless Communications and Networking Conference (WCNC), Barcelona, Catalonia, Spain, April 2018.
- Recipient of the **Institute** (IIT Kharagpur) **Full Financial Grant** for presenting paper in the 6<sup>th</sup> IEEE International Conference on Cloud Computing Technology and Science (CloudCom), Singapore, December 2014.
- Recipient of the **Institute** (IIT Kharagpur) **Full Financial Grant** for presenting paper in the 11<sup>th</sup> IEEE India Conference on Emerging Trends and Innovation in Technology (INDICON), Pune, India, December 2014.

## Administrative Responsibilities

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- **Organizing team member** of “Internet of Things: Theory & Applications”, TEQIP-III, IIT Kharagpur held on October 24-28, 2018.
- **Organizing team member** and Teaching Assistant of “Underwater Sensor Networks: Theory and Simulations”, NPOL, Ministry of Defence, Kochi held on April 18-20, 2016.
- **Served** as *Departmental Research Scholar Representative* of School of Information Technology, IIT Kharagpur for academic year 2015-2016.
- **Organizing team member** of *AICTE/QIP Sponsored Short-term course* on “Internet of Things: Convergence of Sensing, Cloud and Big-Data Networking” at IIT Kharagpur held on July 13-26, 2015..
- **Organizing team member** of *International Summer and Winter Term (ISWT) course* on “Enabling Internet of Things with Cloud and Big Data Networking” at IIT Kharagpur held on May 25-June 7, 2015.
- **Served** as *Departmental Research Scholar Representative* of School of Information Technology, IIT Kharagpur for academic year 2014-2015.
- **Elected** *Student Senate Member (SSM)* and *Vice-President (VP)* of Vikram Sarabhai Residential Complex (Hall), IIT Kharagpur, Kharagpur, West Bengal, India for academic year 2014-2015.