

Tamoghna Ojha

CONTACT INFORMATION

Department of Computer Science and Engineering
Indian Institute of Technology Kharagpur
West Bengal, India - 721302
tamoghna.ojha@gmail.com
tojha@sit.iitkgp.ernet.in
<http://cse.iitkgp.ac.in/~tamoghna/>

C/O Tapan Kanti Ojha
Vill & P.O. - Pirakata
Dist. - Paschim Medinipur
West Bengal, India - 721516
Mobile - +91 - 9932719965

RESEARCH INTERESTS

Internet of Things, Sensor-cloud, Edge Computing, Service Provisioning, Energy-efficiency, Resource Management, Ad-hoc and Sensor Networks.

RESEARCH EXPERIENCE

Post-Doctoral Research Fellow
Institute for Informatics and Telematics (IIT)
National Research Council (CNR), Italy
Jan 2021 - Till date

- **Peer-to-Peer Wireless Power Transfer:** Part of team responsible for development of wireless power transfer strategies among the mobile nodes and IoT network.

Senior Research Fellow
Sponsored Research and Industrial Consultancy
Indian Institute of Technology Kharagpur
November 2013 - July 2017

- **Measurement to Management (M2M): Improved Water Use Efficiency and Agricultural Productivity through Experimental Sensor Network:** Part of team responsible for deployment and data acquisition using sensor networks in the target locations, and development of real-time decision making systems for improved water use in agricultural field.

Junior Project Assistant
Sponsored Research and Industrial Consultancy
Indian Institute of Technology Kharagpur
November 2010 - March 2013

- **Towards Robust Efficient and Secure Data Acquisition in Underwater Sensor Networks (UWSN):** Part of team developing a simulator for UWSNs, and designing specific protocols for UWSNs.

TEACHING ASSISTANTSHIP

- *Autumn 2018:* Programming and Data Structures Theory, IIT Kharagpur, India.
- *Autumn 2016 - Spring 2018:* Programming and Data Structures Laboratory, IIT Kharagpur, India.
- *April 2016:* Short term course on “Underwater Sensor Networks: Theory and Simulations” in NPOL (DRDO), Kochi, India.

EDUCATION

Doctor of Philosophy, Computer Science & Engineering, 2020

Indian Institute of Technology Kharagpur, India

- Thesis Title: *Provisioning Sensors-as-a-Service in Sensor-cloud-based Internet of Things*
- Advisors:
 - Prof. Sudip Misra, *IEEE Senior Member, Humboldt Fellow (Germany), NSERC Fellow (Canada), NASI Fellow (India), NASc Fellow (India)*
 - Prof. Narendra Singh Raghuwanshi, *INAE Fellow (India), NAAS Fellow (India)*

Master of Science by Research, Information Technology, 2014

Indian Institute of Technology Kharagpur, India

- Thesis Title: *Architecture and Localization for Underwater Sensor Networks*
- Advisor: Prof. Sudip Misra, *IEEE Senior Member, Humboldt Fellow (Germany), NSERC Fellow (Canada), NASI Fellow (India), NASc Fellow (India)*
- CGPA: 9.6

Post Graduate Diploma in Embedded Systems Design, 2009

Center for Development of Advanced Computing, Mohali, India

- Project Topic: *A Real-time application for peripheral controlling and monitoring*
- Advisor: Ms. Sonia Dosanjh
- Marks: 80.50%

B. Tech., Electronics & Communication Engineering, 2008

West bengal University of Technology, Kolkata

- Thesis Title: *Microcontroller based Infra-Red Tracking Robot*
- DGPA: 7.89

Higher Secondary , 2004

Vidyasagar Vidyapith, Midnapore, West Bengal, India

- Marks: 71.60%

Secondary, 2002

Pirakata High School, Pirakata, West Bengal, India

- Marks: 83.38%

**AWARDS AND
SCHOLARSHIPS**

- **Research Assistantship** from Indian Institute of Technology Kharagpur, August 2019 - May 2020.
- **Senior Research Fellowship** from MHRD, Govt. of India, August 2017 - July 2019.
- **Richard E Merwin Student Scholarship** from IEEE Computer Society, Dec. 2016. (Award: USD 1,000)
- **Senior Research Fellowship** from ITRA, Govt. of India, November 2013 - July 2017.
- **Winner of GE Edison Challenge 2013** (Dec. 2013), GE John F. Welch Technology Center, Bangalore. (Award INR 10,00,000.00)
- **Scholarship** from Foundation for Excellence Inc., USA during 2000-2004.

**RESEARCH AND
TRAVEL GRANTS**

- Selected for **Plugin Cycle 2 startup cohort** with a grant of INR 10,00,000 during October 2018–June 2019.
- Received **Biotechnology Ignition Grant** of INR 41,79,000 from DBT, Govt. of India in 2015-17.
- **Best Conference Travel Grant** support from IIT Kharagpur for presenting my paper at IEEE GLOBECOM 2018 at Abu Dhabi, UAE.
- **Travel Grant** from DST, Govt. of India for attending IEEE CloudCom, Singapore, Dec. 2014.
- **Conference Travel Grant** from IEEE CloudCom 2014. (Award: SGD 1,000)

OTHER AWARDS

- *IEEE TechSym 2016* was selected for **2017 Darrel Chong student activity award** in *GOLD* category.

PATENTS

D. Sheet, K. Basak, **T. Ojha**, S. P. K. Karri, “Multispectral Optical Imaging Device and Computational Techniques for Contactless Functional Imaging of Skin”, *Indian Patent Published*, Application No. 201731022695, January 2019.

- S. Misra, A. Roy, P. Kar, S. Goswami, **T. Ojha**, “An Adverse Environmental Effect Resistant Seamless Wireless Sensor Network System”, *Indian Patent Published*, File No. 425/KOL/2015, Published: December 2017.
- T. Ojha**, S. Misra, N. S. Raghuvanshi, “Internet of Things for Agricultural Applications: The State-of-the-art”, *IEEE Internet of Things Journal*, 2021. [DOI: 10.1109/JIOT.2021.3051418] (Impact factor – 9.936)
- S. Misra, **T. Ojha**, P. Madhusoodhanan, “SecRET: Secure Range-Based Localization with Evidence Theory for Underwater Sensor Networks”, *ACM Transactions on Autonomous and Adaptive Systems*, 2020. (Impact factor – 1.775)
- T. Ojha**, S. Misra, M. S. Obaidat, “SEAL: Self-adaptive AUV-based Localization for Sparsely Deployed Underwater Sensor Networks”, *Computer Communications (Elsevier)*, vol. 154, pp. 204–215, 2020. (Impact factor – 2.766)
- T. Ojha**, S. Misra, N. S. Raghuvanshi, H. Poddar, “DVSP: Dynamic Virtual Sensor Provisioning in Sensor-Cloud based Internet of Things”, *IEEE Internet of Things Journal*, vol. 6, no. 3, pp. 5265–5272, 2019. (Impact factor – 9.936)
- T. Ojha**, S. Misra, N. S. Raghuvanshi, “Sensing-cloud: Leveraging the benefits for agricultural applications”, *Computers and Electronics in Agriculture*, vol. 135, pp. 97–106, 2017. (Impact factor – 3.171)
- A. K. Mandal, S. Misra, **T. Ojha**, M. K. Dash, and M. S. Obaidat, “Oceanic Forces and their Impact on the Performance of Mobile Underwater Acoustic Sensor Networks,” *International Journal of Communication Systems (Wiley)*, vol. 30, no. 1, pp. e2882, 2017. (Impact factor – 1.278)
- S. Misra, S. Bera, **T. Ojha**, H. Mouftah, A. Anpalagan, “ENTRUST: Energy Trading Under Uncertainty in Smart Grid Systems”, *Computer Networks (Elsevier)*, vol. 110, pp. 232–242, 2016. (Impact factor – 3.030)
- A. K. Mandal, S. Misra, M. K. Dash, and **T. Ojha**, “Performance Analysis of Distributed Underwater Wireless Acoustic Sensor Networks in the Presence of Internal Solitons,” *International Journal of Communication Systems (Wiley)*, vol. 29, no. 13, pp 1940–1955, 2016. (Impact factor – 1.278)
- T. Ojha**, S. Misra, N. S. Raghuvanshi, “Wireless Sensor Networks for Agriculture: The State-of-the-Art in Practice and Future Challenges”, *Computers and Electronics in Agriculture*, vol. 118, pp. 66–84, 2015. (Was listed as the **most cited** and among **most downloaded** papers of this journal during 2016–19.) (Impact factor – 3.171)
- A. K. Mandal, S. Misra, **T. Ojha**, M. K. Dash, and M. S. Obaidat, “Effects of Wind-induced Near-surface Bubble Plumes on the Performance of Underwater Wireless Acoustic Sensor Networks”, *IEEE Sensors Journal*, vol. 16, no. 11, pp. 4092–4099, 2015. (Impact factor – 3.076)
- S. Misra, S. Bera, **T. Ojha**, L. Zhou, “ENTICE: Agent-Based Energy Trading with Incomplete Information in the Smart Grid”, *Journal of Network and Computer Applications*, vol. 55, pp. 202–212, 2015. (Impact factor – 5.273)
- 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, 2015. (Impact factor – 5.112)
- S. Misra, S. Bera, and **T. Ojha**, “D2P: Distributed Dynamic Pricing Policy in Smart Grid for PHEVs Management,” *IEEE Transactions on Parallel and Distributed Systems*, vol. 26, no. 3, pp. 702–712, 2014. (Impact factor – 3.402)
- T. Ojha**, M. Khatua, and S. Misra, “Tic-Tac-Toe-Arch: A Self-organizing Virtual Architecture for Underwater Sensor Networks,” *IET Wireless Sensor Systems*, vol. 3, no. 4, pp. 307–316, 2013.

CONFERENCE
PUBLICATIONS

- T. Ojha**, S. Misra, N. S. Raghuwanshi, M. S. Obaidat, “iDVSP: Intelligent Dynamic Virtual Sensor Provisioning in Sensor-Cloud Infrastructure”, in *Proceedings of IEEE GLOBECOM*, pp. 1–6, Abu Dhabi, UAE, 2018.
- S. Bera, **T. Ojha**, S. Misra, M. S. Obaidat, “Cloud-based Optimal Energy Forecasting for Enabling Green Smart Grid Communication”, in *Proceedings of IEEE GLOBECOM*, pp. 1–6, San Diego, CA, USA, 2015.
- T. Ojha**, S. Bera, S. Misra and N. S. Raghuwanshi, “Dynamic Duty Scheduling for Green Sensor-Cloud Applications,” in *Proceedings of 6th IEEE International Conference on Cloud Computing Technologies and Science(CloudCom)*, Singapore, pp. 841–846, Dec. 2014.
- T. Ojha** and S. Misra, “MobiL: A 3-Dimensional Localization Scheme for Mobile Underwater Sensor Networks,” in *Proceedings of 19th National Conference on Communications (NCC)*, pp. 1–5, New Delhi, India, IEEE, Feb. 2013.
- T. Ojha** and S. Misra, “HASL: High-Speed AUV-Based Silent Localization for Underwater Sensor Networks,” in *Proceedings of the 9th International Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness (QShine)*, LNICST 115, pp. 128–140, Greater Noida, India, Springer, Jan. 2013.

PROFESSIONAL
AFFILIATIONS

- Professional member, IEEE (2021–present)
- Graduate student member, IEEE (2013–2020)
- IEEE Communication Society member (2014–present)
- IEEE Computer Society member (2014–present)
- Student member, ACM (2013–2020)

VOLUNTEERING
EXPERIENCE

- Student Representative, IEEE Computer Society India Council SAC (2017)
- IEEE UPP Liaison, IEEE Student Branch, IIT Kharagpur (2016–2017)
- Chair of Executive Committee, IEEE Student Branch, IIT Kharagpur (2015–2016)
- Member, Conference/Workshop Committee, IEEE Computer Society India Council (2015–2016)
- Member, Student Activity Committee, IEEE Student Branch, IIT Kharagpur (2014–2015)
- Graduate Student Volunteer, IEEE Student Branch IIT Kharagpur (2013–2014)
- Member, Breakthrough Science Society (2013–Till date)

REFeree SERVICE

- *Conference Organizing Committee member*:
 - *General Chair*, WPSN 2021 (in conjunction with IEEE DCOSS), Pafos, Cyprus
 - *TPC member*, IEEE ISCC 2021, Athens, Greece
 - *TPC member*, IEEE PIMRC 2021, Helsinki, Finland
 - *Publicity Co-Chair*, DCOSS 2021, Pafos, Cyprus
 - *TPC member*, IEEE PIMRC 2020, London, UK
 - *TPC member*, IEEE PIMRC 2019, Istanbul, Turkey
 - *TPC member*, IEEE ATC 2019, Hanoi, Vietnam
 - *TPC member*, ACM FICN 2018 (in conjunction with ACM MobiCom), New Delhi, India
 - *TPC member*, IEEE ATC 2018, Ho Chi Minh City, Vietnam
 - *TPC member*, IEEE PIMRC 2018, Bologna, Italy
 - *Organizing Committee member*, IEEE CSIS 2017, IIT Allahabad, India
 - *TPC member*, ICACIE 2017, Ajmer, India
 - *TPC member*, NBIS 2017, Ryerson University, Canada
 - *Organizing Chair*, IEEE TechSym 2016, IIT Kharagpur, India
 - *TPC member*, ICACDS 2016 (Springer), Ghaziabad, India
 - *TPC member*, ICACIE 2016 (Springer), Bhubaneswar, India
 - *TPC member*, IEEE ScalCom 2014, Bali, Indonesia
 - *TPC & Organizing Committee member*, IEEE TechSym 2014, IIT Kharagpur, India
- *Journal reviewer*:
 - IEEE Transactions on Mobile Computing

- IEEE Transactions on Vehicular Technology
- IEEE Internet of Things Journal
- IEEE Systems Journal
- IEEE Sensors Journal
- IEEE Access
- Computer Networks (Elsevier)
- Pervasive and Mobile Computing (Elsevier)
- Computers and Electronics in Agriculture (Elsevier)
- Computer Communication (Elsevier)
- International Journal of Communication Systems (Wiley)
- Telecommunication Systems (Springer)
- International Journal of Communication Networks and Distributed Systems (Inderscience)
- *Conference reviewer:*
 - 2021: IEEE CCNC, ICCCS, COVI-COM (IEEE ICC), IEEE DCOSS
 - 2020: IEEE PIMRC, NCC
 - 2019: IEEE PIMRC, IEEE ATC, OPTRONIX
 - 2018: IEEE PIMRC
 - 2017: IEEE PIMRC
 - 2016: IEEE TechSym, IEEE ANTS, IEEE ICECS
 - 2015: AIMoC, IEEE ANTS
 - 2014: ISED, IEEE TechSym
 - 2013: IEEE WiSEE, NCC

DATED

April 11, 2021