

Atonu Ghosh

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Midnapore, West Bengal, 721102, India



Employment History

- 27/10/2022 – 31/12/2023 **Senior Research Fellow, Indian Institute of Technology Kharagpur** in MeitY sponsored project entitled "TribeConnect: Integrated Smart Tribal Eco-Platform – A Proof of Concept in Chhattisgarh".
- 22/10/2020 – 22/10/2022 **Junior Research Fellow, Indian Institute of Technology Kharagpur** in MeitY sponsored project entitled "TribeConnect: Integrated Smart Tribal Eco-Platform – A Proof of Concept in Chhattisgarh".

Education

- 2021 - Present **Ph.D., Computer Science & Engineering**,
Supervisor: Prof Sudip Misra,
Indian Institute of Technology Kharagpur.
- 2020 **Master of Technology, Computer Science & Engineering**,
Maulana Abul Kalam Azad University of Technology (formerly WBUT).
8.93 / 10
- 2017 **Bachelor of Technology, Computer Science & Engineering**,
Institute of Engineering & Management, Kolkata.
7.71 / 10

Patents

Filed

- 1 "A secured edge-based automated power control and communication system for legacy iot infrastructures," Indian Patent, File No.: 202131038016 dated 23/08/2021.
- 2 "A system for remote monitoring, actuation and data prediction," Indian Patent, File No.: 202231040824 dated 17/07/2022.
- 3 "Blockchain-enabled iot system and method for securing real time data in a microcontroller-based blockchain network," Indian Patent, File No.: 202211070221 dated 06/12/2022.
- 4 "Modularized iot-based on-demand ambulatory hospital recommender system," Indian Patent, File No.: 202231008007 dated 15/02/2022.
- 5 "Wireless network device for wireless communication with user devices in a wireless communication network," Indian Patent, File No.: 202311028663 dated 20/04/2023.

Research Publications

Journal Articles

- 1 **A. Ghosh**, S. Misra, V. Udutalapally, and D. Das, "Loraute: Routing messages in backhaul lora networks for underserved regions," *IEEE Internet of Things Journal*, pp. 1–1, 2023. [DOI](#): 10.1109/JIOT.2023.3281941.

- 2 **A. Ghosh**, S. Misra, and V. Udutalapally, "Multiobjective optimization and sensor correlation framework for iot data validation," *IEEE Sensors Journal*, vol. 22, no. 23, pp. 23 581–23 589, 2022. [DOI](#): 10.1109/JSEN.2022.3215993.
- 3 **A. Ghosh**, A. Mukherjee, and S. Misra, "Sega: Secured edge gateway microservices architecture for iiot-based machine monitoring," *IEEE Transactions on Industrial Informatics*, vol. 18, no. 3, pp. 1949–1956, 2022. [DOI](#): 10.1109/TII.2021.3102158.
- 4 **A. Ghosh**, R. Saha, and S. Misra, "Persistent service provisioning framework for iomt based emergency mobile healthcare units," *IEEE Journal of Biomedical and Health Informatics*, vol. 26, no. 12, pp. 5851–5858, 2022. [DOI](#): 10.1109/JBHI.2022.3172624.

Conference Proceedings

- 1 **A. Ghosh**, D. De, and K. Majumder, "A systematic review of log-based cloud forensics," in *Inventive Computation and Information Technologies*, Singapore: Springer Singapore, 2021, pp. 333–347. [DOI](#): 10.1007/978-981-33-4305-4_26.
- 2 **A. Ghosh**, K. Majumder, and D. De, "Android forensics using sleuth kit autopsy," in *Proceedings of the Sixth International Conference on Mathematics and Computing*, Singapore: Springer Singapore, 2021, pp. 297–308. [DOI](#): 10.1007/978-981-15-8061-1_24.
- 3 **A. Ghosh**, "Intelligent appliances controller using raspberry pi," in *2016 IEEE 7th Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON)*, 2016, pp. 1–5. [DOI](#): 10.1109/IEMCON.2016.7746253.

Book Chapters

- 1 **A. Ghosh**, K. Majumder, and D. De, "A systematic review of digital, cloud and iot forensics," in *The "Essence" of Network Security: An End-to-End Panorama*, Singapore: Springer Singapore, 2021, pp. 31–74, ISBN: 978-981-15-9317-8. [DOI](#): 10.1007/978-981-15-9317-8_2.

Technical Skills

Solution Development	Full Stack IoT Software and Hardware, Condition Monitoring, Hands on Cloud & Edge.
Coding	Python, C, SQL.
Databases	MySQL, SQLite, InfluxDB.
Web Dev	Docker, Django, Web API, HTML, CSS, JavaScript, Apache Web Server, NGINX.
Misc.	Academic research, Product architecting & development, Server and network configuration.

Experiences

Product Development

2020 - Present

📖 **System Architect**, SensorDrops Networks Pvt. Ltd., Indian Institute of Technology Kharagpur.

- Edge and Machine Learning (ML) based intrusion detection and GSM-based alert system.
- Retrofitting PLC and hand-held gauge to automate iron pipe coating thickness measurement.
- Retrofitting an electrical power station to enable remote monitoring and alerts.
- Retrofitting 4-20 mA-based gas sensors to realize an IoT system.
- Warehouse condition monitoring system.

NPTEL Teaching Assistantship

January - April, 2024

📖 **Introduction To Internet Of Things**, Prof. Sudip Misra, National Programme on Technology Enhanced Learning (NPTEL), Indian Institute of Technology Kharagpur.

July - October, 2023

📖 **Introduction To Internet Of Things**, Prof. Sudip Misra, National Programme on Technology Enhanced Learning (NPTEL), Indian Institute of Technology Kharagpur.

January - April, 2023

📖 **Introduction To Internet Of Things**, Prof. Sudip Misra, National Programme on Technology Enhanced Learning (NPTEL), Indian Institute of Technology Kharagpur.

Institute Teaching Assistantship

Autumn, 2023 - 2024

📖 **Programming and Data Structure Laboratory**, Prof. Sudip Misra, Indian Institute of Technology Kharagpur.

Spring, 2023 - 2024

📖 **Programming and Data Structure Laboratory**, Prof. Sudip Misra, Indian Institute of Technology Kharagpur.

Autumn, 2022 - 2023

📖 **Ubiquitous Computing**, Prof. Sudip Misra, Indian Institute of Technology Kharagpur.

Spring, 2022 - 2023

📖 **Programming and Data Structure Laboratory**, Prof. Sudip Misra, Indian Institute of Technology Kharagpur.

📖 **Computer Networks Laboratory**, Prof. Sudip Misra, Indian Institute of Technology Kharagpur.

Autumn, 2021 - 2022

📖 **Programming and Data Structure Laboratory**, Prof. Sudip Misra, Indian Institute of Technology Kharagpur.

Spring, 2021 - 2022

📖 **Computer Networks Laboratory**, Prof. Sudip Misra, Indian Institute of Technology Kharagpur.

References

Available on Request