



# Arko Datta

PhD Scholar at SeNSE Lab, Dept. of CSE, IIT Madras

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## EDUCATION

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### Indian Institute of Technology, Madras

*Ph.D in Computer Science and Engineering*

*SeNSE Lab, Dept. of CSE, guide: Dr. Ayon Chakraborty*

Chennai, Tamil Nadu, India

*Jul 2025 (Ongoing)*

### National Institute of Technology, Durgapur

*Masters of Technology in Computer Science and Engineering; GPA: 9.60/10.00*

*Systems Research Lab (SRL), Dept. of CSE, guide: Dr. Sujoy Saha*

Durgapur, West Bengal, India

*Aug 2023 – May 2025*

### Kalinga Institute of Industrial Technology

*Bachelor of Technology in Computer Science and Engineering; GPA: 9.31/10.00*

Bhubaneswar, Odisha, India

*Jul 2018 – Jul 2022*

### M.P. Birla Foundation Higher Secondary School

*ISC (Class XII); Score: 92.6%*

Kolkata, West Bengal, India

*Apr 2018*

## AWARDS & ACHIEVEMENTS

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**Institute Gold Medal:** For achieving the highest CGPA in the Department of Computer Science and Engineering, in NIT Durgapur. (Dec 2025)

**Institute Best Project:** Awarded as the best work among all postgraduate students across departments, in NIT Durgapur. Awarded for I-VayuWise: M.Tech. thesis, which provides an end-to-end intelligent air quality monitoring, mitigation and validation system. (Dec 2025)

**Travel Award:** Awarded student travel award to present our research work at COMSNETS 2025, held at Chancery Pavilion Hotel, Bengaluru. (Jan 2025)

**Second Place, Best Student Idea:** Received by our team, "Team PolluSense", in the Student Design Contest, ISSS International Conference on Micro, Nano, and Smart Systems (IC-MNSS 2024). Our team comprised of myself and Pabitra Majhi, hailing from Systems Research Lab, NIT Durgapur and guided by Dr. Sujoy Saha. (Jul 2024)

**Travel Award:** Awarded student travel award to present our research work at ICDCN 2024, held at IIT Madras. (Jan 2024)

## PUBLICATIONS

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- ***An RF-Aware Digital Twin for Scalable Wireless Navigation in Dynamic Environments***  
Arko Datta and Ayon Chakraborty  
Transactions on Mobile Computing (Communicated)
- ***ARGOS: Leveraging Visual Priors for Scalable Wireless Navigation in Dynamic Environments***  
Arko Datta, Tharaneeshwaran V U, Aravindh Sriram Kumar A G, and Ayon Chakraborty  
International Conference on Pervasive Computing and Communications (IEEE PerCom), 2026, Pisa, Italy
- ***PolluSenseCheck: Cost Effective TinyML-based Air Quality Monitoring System with In-Built Sensor Fault Detection***  
Arko Datta, Joyita Chakraborty, Pabitra Majhi, Astom Mondal, Satyaki Roy, Subrata Nandi and Sujoy Saha  
International Conference on COMMunication Systems & NETWORKS (COMSNETS), 2025, Bengaluru, India

## Posters, Workshops and Artifacts

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- ***ARTIFACT: Leveraging Visual Priors for Scalable Wireless Navigation in Dynamic Environments***  
Arko Datta, Tharaneeshwaran V U, Aravindh Sriram Kumar A G, and Ayon Chakraborty  
Artifact@International Conference on Pervasive Computing and Communications (**IEEE PerCom**), 2026, Pisa, Italy  
  
*Data and Open Source Contribution:* <https://github.com/senselab-iitm/argos>

- ***Adaptive Threshold Learning for Robust First-Path Detection in UWB Ranging***  
Shrishti Bekal Mudiakal, Akash Kumar Paul, **Arko Datta**, Ayon Chakraborty  
Poster @ International Conference on COMMunication Systems & NETworkS (**COMSNETS**), 2026, Bengaluru, India
- ***iAirGuard: A Modular IoT Architecture with Dynamic Sampling and TinyML-Based Fault Detection for Air Quality Monitoring***  
Molay Mondal, **Arko Datta**, Prashanth Durgam, Astom Mondal, Khushi Shyam, Khushi Shyam, Subrata Nandi, Sanghita Bhattacharjee and Sujoy Saha  
SysAI Workshop @ International Conference on COMMunication Systems & NETworkS (**COMSNETS**), 2026, Bengaluru, India
- ***Efficient Air Quality Index Prediction on Resource-Constrained Devices using TinyML: Design, Implementation, and Evaluation***  
**Arko Datta**, Aniruddha Pal, Ranbir Marandi, Nilanjan Chattaraj, Subrata Nandi and Sujoy Saha  
MLBSS Workshop @ International Conference on Distributed Computing and Networking (**ICDCN**) 2024, Chennai, India
- ***Real-Time Air Quality Predictions for Smart Cities using TinyML***  
**Arko Datta**, Aniruddha Pal, Ranbir Marandi, Nilanjan Chattaraj, Subrata Nandi and Sujoy Saha,  
Poster @ International Conference on Distributed Computing and Networking (**ICDCN**), 2024, Chennai, India

## Patents

- ***System And Method For Development Of A Digital Twin For Improving Wireless Localization***  
**Arko Datta** and Ayon Chakraborty  
Filed, Indian Patent 202541132912

## PROJECTS

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- Generative Signal Maps with Visual Priors** | IIT Madras July 2025 – Present
- A project granted by ANRF ARG to aid scalable wireless sensing deployments in dynamic scenarios, with the aid of visual priors
  - **Publications:** IEEE PerCom 2026 (2 publications), COMSNETS 2026
- iPolluSense** | NIT Durgapur March 2024 – May 2025
- A project funded by AI4ICPS IIT Kharagpur Technology Innovation Hub, to develop intelligent air and noise quality monitoring device that provides personalised insights for the user's pollution exposure, as well as perform self-diagnosis and correction of sensors.
  - **Publications:** COMSNETS 2026, COMSNETS 2025
- IntAirSense: Intelligent Air Pollution Monitoring** | NIT Durgapur September 2023 – March 2024
- A project funded by West Bengal DST, to develop Development of air pollution monitoring systems which use machine learning to predict a more granular AQL.
  - **Publications:** ICDCN 2024 (2 publications)

## EXPERIENCE

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- Indian Institute of Technology Madras** Chennai, Tamil Nadu, India  
*Teaching Assistant* *January 2026 – Present*
- Assisted in developing lecture content and tutorials for a batch of 50 professional M.Tech. students from notable companies such as Qualcomm, Cert-In and MeITY
  - Enhanced learning experience of students via demos and evaluation materials
- Indian Institute of Technology Madras** Chennai, Tamil Nadu, India  
*Web Development Assistant* *July 2025 – Present*
- Revamped and maintained the website for the Department of Computer Science and Engineering of IIT Madras.

## National Institute of Technology, Durgapur

Durgapur, West Bengal, India

*Teaching Assistant*

*August 2023 – May 2025*

- Assisted in developing lecture content and tutorials and perform laboratory activities in the Data Structures, Computer Networks, Compiler Design, and Data Science laboratories.
- Prepared presentations and teaching materials to supplement Data Structures, Data Science, Internet of Things, and Computer Networks lectures.

## Indian Institute of Technology, Madras

Chennai, Tamil Nadu, India

*Summer Researcher*

*May 2024 – July 2024*

- Was involved in a research on Advanced Capacitive Sensing in the Sensing and Networked Systems Engineering (SeNSE) lab at IIT Madras, under Dr. Ayon Chakraborty, department of CSE.

## HighRadius Technologies Pvt. Ltd.

Bhubaneswar, Odisha, India

*Associate Software Engineer - I*

*July 2022 – March 2023*

- Developed product configuration migration solutions to reduce configuration migration process by 90%.
- Developed product configuration solutions to reduce configuration process by 70%.
- Trained and mentored a batch of hundred interns to develop configuration and migration solutions.

## HighRadius Technologies Pvt. Ltd.

Remote

*Full-Time Intern*

*April 2021 – July 2022*

- Developed product configuration migration solutions to reduce configuration migration process by 90%.
- Developed product configuration solutions to reduce configuration process by 70%.

## HighRadius Technologies Pvt. Ltd.

Remote

*Part-Time Intern*

*January 2021 – March 2021*

- Received training in the field of Machine Learning and full stack web development using ReactJS and Java.
- Developed a full stack AI-enabled B2B Order Management System.

## SKILLS

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**Languages:** Python, C/C++, Java, JavaScript

**Technical Skills:** Systems Development, Firmware Development, Computer Vision, Deep Learning

**Soft Skills:** Leadership, Teamwork, Quick-Learner, Eye for Detail

**Hobbies:** Piano, Harmonica, Kalimba

## ACADEMIC SERVICE

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**Artifact Evaluator:** ACM MobiSys (Feb 2026)

**Reviewer:** Elsevier Ad Hoc Networks Journal (Dec 2025, Mar 2026)

**Web Developer:** Department of Computer Science and Engineering, IIT Madras (Jul 2025 – Present)

**Web Chair:** 4th International Workshop on Societal Computing for the Internet of Things and You (SoCIeTY 2025), co-located with ICDCN (Jan 2025)

**Reviewer:** 5th International Conference on Frontiers in Computing and Systems (COMSYS 2024) (Dec 2024)