

# Md Nurul Absur

PhD Candidate in Computer Science

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## Research Summary

My research lies at the intersection of **Computer Vision and Systems**, advancing **Edge Intelligence for XR, 3D reconstruction, and multimodal sensing**. I design frameworks that combine **vision, depth, wireless, and inertial data** with **system-level components such as WiFi, MEC, SDN, and O-RAN** to achieve **low-latency, privacy-preserving, and disruption-resilient performance**. The broader goal of my work is to enable **trustworthy, scalable, and real-time intelligence** for healthcare, disaster response, and next-generation immersive environments.

## Research Interests

- Edge Intelligence and Distributed System Design
- Multimodal AI Fusion (Vision, Depth, CSI, Inertial)
- XR and 3D Reconstruction in Resource-Constrained Environments
- Resilient, Privacy-Preserving, and Low-Latency Edge–Cloud AI
- Applications in Healthcare, Disaster Response, and Immersive Systems

## Education

**CUNY Graduate Center**, New York, USA

Aug 2023 – Present

Ph.D. in Computer Science

Advisor: Prof. Saptarshi Debroy

**Jahangirnagar University**, Dhaka, Bangladesh

Aug 2019 – Oct 2021

M.S. in Applied Statistics & Data Science

Thesis: *Deep Learning & Shallow Learning in Biomedical Data & Image*

**Bangladesh University of Professionals**, Dhaka, Bangladesh

Jan 2015 – Dec 2018

B.Sc. in Information & Communication Engineering

Thesis: *Order Dependency in Sequential Correlation*

## Publications

### PhD & Core Research

1. **Md. Nurul Absur**, Soruya Saha, Saptarshi Debroy. 2025. “[Detection and Recovery of Adversarial Slow-Pose Drift in Offloaded Visual-Inertial Odometry.](#)” **ACM MobiHoc XR Workshop 2025.**
2. Soruya Saha, **Md. Nurul Absur**, Shima Yousefi, Saptarshi Debroy. 2025. “[Detection of Misreporting Attacks on Software-Defined Immersive Environments.](#)” **IEEE CNSM 2025.**
3. Motahare Mounesan, Sourya Saha, Houchao Gan, **Md. Nurul Absur**, Saptarshi Debroy. 2025. “[Reinforcement Learning-Driven Edge Management for Reliable Multi-view 3D Reconstruction](#)” **IEEE CNSM 2025.**
4. **Md. Nurul Absur**, Abhinav Kumar, Swastik Brahma, Saptarshi Debroy. 2025. “[Reliable Multi-view 3D Reconstruction for ‘Just-in-time’ Edge Environments.](#)” **IEEE MASS 2025.**
5. Manal Zneit, **Md. Nurul Absur**, Sourya Saha, Saptarshi Debroy. 2025. “[Static Object Classification Using WiFi Signals.](#)” **IEEE LCN 2025.**
6. **Md. Nurul Absur**, Swastik Brahma, Saptarshi Debroy. 2024. “[Poster: Reliable 3D Reconstruction for Ad-hoc Edge Implementations.](#)” **IEEE SEC 2024.**

### Independent & Prior Works

1. **Md. Nurul Absur**, Sourya Saha, Sifat Nawrin Nova, Kazi Fahim Ahmad Nasif, Md Rahat UI Nasib. 2025. "Optimizing CDN Architectures: Multi-Metric Algorithmic Breakthroughs for Edge and Distributed Performance." **IEEE ICNC 2025**.
2. **Md. Nurul Absur**. 2023. "Anomaly Detection in Biomedical Data and Image Using Various Shallow and Deep Learning Algorithms." **Springer**.
3. **Md. Nurul Absur**, Sifat Nawrin Nova, Shourya Saha, Kazi Fahim Ahmad Nasif. 2024. "Revolutionizing Image Recognition: Next-Generation CNN Architectures for Handwritten Digit and Objects." **IEEE ISWTA 2024**.
4. **Md. Nurul Absur**, et al. 2019. "Order Dependency in Sequential Correlation." **IEEE ICECTE 2019**.

### Collaborative Publications

1. "A novel interpretable and real-time dengue prediction framework using clinical blood parameters with genetic and GAN-based optimization" **Frontiers AI**, 2025.
2. "Internet of Things (IoT)-Based Solutions for Uneven Roads and Balanced Vehicle Systems Using YOLOv8" **MDPI Future Internet**, 2025.
3. "Optimizing Deep Learning for Skin Cancer Classification: A Computationally Efficient CNN with Minimal Accuracy Trade-Off" **IEEE**, 2025.
4. "Optimized Approaches to Malware Detection: A Study of Machine Learning and Deep Learning Techniques" **IEEE**, 2025.
5. "Augmented Reality-Assisted Pediatric Surgery: A Machine Learning-Based Approach for Enhancing Accuracy" **IEEE**, 2025.
6. "Leveraging Deep Learning for Improved Sentiment Analysis in Natural Language Processing" **IEEE**. 2025.

### In Preparation

- **Md. Nurul Absur**, et al. "Privacy-Preserving HAR in Edge-Server Continuum." (In Preparation)

### Professional Experience

<b>Graduate Research Assistant</b> , CUNY Graduate Center	Aug 2023 – Present
<b>Assistant Manager</b> , Standard Chartered Bank Ltd., Bangladesh	Dec 2022 – July 2023
<b>Senior Executive</b> , IPDC Finance Limited, Bangladesh	May 2019 – Dec 2022

### Teaching Experience

<b>Adjunct Lecturer</b> , Hunter College Course: Computer Architecture	Summer 2025
<b>Graduate Teaching Assistant</b> , Hunter College Courses: Operating Systems, Computer Architecture	Fall - Spring 2025, Fall 2024
<b>Graduate Teaching Assistant</b> , CUNY Graduate Center Course: Algorithms	Fall 2023

### Academic Service

- **Conference Reviewer**: IEEE BHI, IEEE Globecom, IEEE PCDS, IEEE ISBI, ICLR, IEEE IPCCC, IEEE ISCI, IEEE AGRETA, IEEE ISCAIE, IEEE ISIEA, ICSGRC, I2CACIS.
- **Journal Reviewer**: Science Publications Journal, IJECE, .

## Awards & Fellowships

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<b>KNIT11 Travel Stipend</b> , FABRIC/KNIT	Oct 2025
<b>Student Travel Grant</b> , IEEE SEC 2024	Dec 2024
<b>Graduate Assistantship A</b> , CUNY Graduate Center	2023–Present
<b>IS-Excellence Fellowship</b> , CUNY Graduate Center	Fall 2023

## Mentoring

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<b>Maximilian Jaramazovic</b> , Undergraduate Student, Hunter College	Jan 2025 – Present
<b>Akash Das</b> , Master Student, Federation University	Sep 2024 – Present

## Skills

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**Programming:** Python, C/C++, Java, R, MATLAB  
**Frameworks:** PyTorch, TensorFlow, Keras, OpenCV  
**Tools:** Git, Docker, Jupyter, LaTeX  
**Databases:** SQL, Oracle