Md Abdul **Mutalib**

Shenzhen, China

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Education

Harbin Institute of Technology, Shenzhen (HITSZ)

Shenzhen, China

M.Sc. in Computer Science and Technology — *Sep. 2025 - Present*

- Current GPA: 3.53/4.00.
- Chinese Government Scholarship (CSC) recipient.
- Research focus: Artificial Intelligence, Computer Vision, and Medical Image Analysis.

North East University Bangladesh (NEUB)

Sylhet, Bangladesh

B.Sc. (Engg.) in Computer Science and Engineering — *Aug. 2019 - Mar. 2024*

- Bachelor's Thesis/Project: *Pneumonia Detection from Chest X-Ray Using Machine Learning and Deep Learning Models*.

Skills

Programming	Python, C, C++, Java, LaTeX
AI & ML	Machine Learning, Deep Learning, PyTorch, TensorFlow, Keras, Scikit-learn
Computer Vision	OpenCV, Image Processing, Medical Image Analysis, HOG, LBP, Grad-CAM
Data Science	NumPy, Pandas, Matplotlib, Seaborn
Web Development	HTML, CSS, JavaScript, Bootstrap, MySQL, WordPress
Tools	Git, GitHub, Jupyter Notebook
Research	Literature Review, Scientific Writing, Experimental Design, Data Analysis
Languages	Bengali, English, Chinese

Research Interests

Computer Vision, 3D Vision, Medical Image Analysis, Surgical Vision, Deep Learning, Gaussian Splatting

Research Experience

Bio-Computing Research Center, HITSZ

Shenzhen, China

Research Project — *Sep. 2025 - Present*

- Research focus: "Semantic-Temporal 3D Gaussian Splatting for Surgical Anatomy Understanding."
- Investigating 3D Gaussian Splatting for semantic representation and understanding of surgical anatomy.
- Reviewing existing 3D Gaussian Splatting and surgical vision methods to identify limitations and research gaps.

Consortium Research Center (CRC)

Bangladesh

Research Assistant — *Jun. 2024 - Nov. 2025*

- **Project:** "Hand Gesture Recognition and Visual Estimations"
- Analyzed 252 peer-reviewed HGR studies (1995–2024), covering datasets, input modalities, algorithms, applications, and emerging trends.
- Compared traditional ML, CNN/RNN, GCN, hybrid, and Transformer-based approaches to identify limitations and research gaps.
- Co-authored a review paper published in *International Journal of Computer Applications* (2025).

UniV

Bangladesh

Assistant Director, R&D Science Unit — *Sep. 2024 - Present*

- Guide a 15-member R&D team in research activities, project development, and technical problem-solving.
- Organized and facilitated "Research & Publications for Beginners — Batch 13," providing practical research training to 47 participants.
- Moderate research sessions and facilitate discussions on research methodology, academic writing, and publication practices.

Publications

1. Das, Kopil, Amina, Noshin, **Mutalib, Md. Abdul**, Chowdhury, Nasrin, and Islam, Mohaiminul. "A Semi-Supervised and Explainable Stacked Ensemble Model for Multi-Class Haematological Disorder Classification Using Complete Blood Count Data." *International Conference on Electrical, Computer and Communication Technologies (ECCT)*, 2026.

2. Islam, Md. Rashidul, Al Mobassir, Abdulla, **Mutalib, Md. Abdul**, Haque, Anamul, Moududi, Md. Abul Ala, Islam, Rakibul, Hasan, Md. Mehedi, Rahman, Nafizur, Haque, Najmul, Miah, Abu Saleh Musa, et al. "Hybrid Deep Learning and Radiomic Shape Feature Fusion for Automated Brain Tumor Classification from MRI Images." *IEEE 2nd International Conference on Quantum Photonics, Artificial Intelligence & Networking (QPAIN)*, 2026. DOI: 10.1109/QPAIN69676.2026.11545798
3. **Mutalib, Md. Abdul**, Das, Kopil, Hossain, Mohammad, Hussain, Shahriar, Nath, Avijit Deb, Zaman, Md. Mahmud, and Hossain, Md. Alamgir. "Two-Stage Noise-Reduced Pneumonia Detection in Chest X-Ray Images Using Denoising Autoencoder–CNN Integration." *IEEE 2nd International Conference on Quantum Photonics, Artificial Intelligence & Networking (QPAIN)*, 2026. DOI: 10.1109/QPAIN69676.2026.11546042
4. **Mutalib, Md. Abdul**, Chowdhury, Md. Anamul Hossain, Rakib, Rayhan Mahmud, Chowdhury, Rumi, Tanvir, Saeid Islam, Sarker, Md. Abdur Rashid, and Jubayer, Md. Fahad. "Assessment and Prediction of Organic Pollution Index Using Deep Learning Models: A Case Study of Major Lakes in Dhaka City, Bangladesh." 2025.
5. Chowdhury, Md. Anamul Hossain, Chowdhury, Rumi, **Mutalib, Md. Abdul**, Rakib, Rayhan Mahmud, Anik, Pujan Dey, and Tanvir, Saeid Islam. "Machine Learning-Based Air Quality Forecasting in Key Urban-Industrial Zones of Bangladesh." 2025.
6. Sarowar, Md. Selim, Farjana, Nur E Jannatul, Khan, Md. Asraful Islam, **Mutalib, Md. Abdul**, Islam, Syful, and Islam, Mohaiminul. "Hand Gesture Recognition Systems: A Review of Methods, Datasets, and Emerging Trends." *International Journal of Computer Applications*, 187(2), 1–33, 2025. DOI: 10.5120/ijca2025924776

Extracurricular Activity

Bangladesh-China Youth Student Association (BCYSA)
Shenzhen, China

General Member & Campus Ambassador — *2025 - Present*

- Contribute to a platform of Bangladeshi students and professionals in China that promotes cooperation and mutual understanding between Bangladesh and China.

UniV Newsletter
Bangladesh

Assistant Director

- Coordinated the newsletter team and supervised content collection, editorial work, and publication activities.

Shenzhen Volunteer Service
Shenzhen, China

Volunteer — *Apr. 2026*

- Participated in volunteer service activities through the Shenzhen Volunteer Federation and Nanshan District volunteer organizations.
- Completed 4.00 hours of volunteer service.

NEUB CSE Society
Sylhet, Bangladesh

Executive Member

- Contributed to academic, technical, and student activities within the Computer Science and Engineering community.

ACM Lab, North East University Bangladesh
Sylhet, Bangladesh

Mentor

- Mentored students in programming, problem solving, and computer science-related activities.

Presentations

International Conference on Electrical, Computer and Communication Technologies (ECCT)
Bangladesh

Conference Presenter — *2026*

- Presented "A Semi-Supervised and Explainable Stacked Ensemble Model for Multi-Class Haematological Disorder Classification Using Complete Blood Count Data."

IEEE 2nd International Conference on Quantum Photonics, Artificial Intelligence & Networking (QPAIN)
China

Conference Presenter — *2026*

- Presented "Hybrid Deep Learning and Radiomic Shape Feature Fusion for Automated Brain Tumor Classification from MRI Images."

IEEE 2nd International Conference on Quantum Photonics, Artificial Intelligence & Networking (QPAIN)
China

Conference Presenter — *2026*

- Presented "Two-Stage Noise-Reduced Pneumonia Detection in Chest X-Ray Images Using Denoising Autoencoder–CNN Integration."

APEC Shenzhen – Advancing with AI 2026 International Youth Event

Shenzhen, China

Poster Presenter *Jun. 2026*

- Presented "Robust AI-Based Pneumonia Detection from Chest X-Ray Images Using Denoising Autoencoder–CNN Integration."

3rd International Poster Competition for Young Researchers 2025

Bangladesh

Poster Presenter *2025*

- Presented "A Hybrid Denoising Autoencoder and CNN Approach for Pneumonia Detection from Chest X-Ray Images."

Certifications & Training

Maryam Abacha American University of Nigeria (MAAUN)

Research Methodology and Scientific Writing *Feb. 2025*

Center for Research & Thought (CRT)

Online CRT Winter School 2025 *Feb. 2025*

Aspire Institute

2024 Aspire Leaders Program *Nov. 2024*

- Completed 30 hours of coursework in personal and professional development, educator-led masterclasses, and the Aspire Horizons course.

Simplilearn

Introduction to Data Science *Nov. 2024*

DeepLearning.AI & Stanford University / Coursera

Supervised Machine Learning: Regression and Classification *Jun. 2023*

IBM / Coursera

Machine Learning with Python *Jun. 2023*

IBM / Coursera

What is Data Science? *Aug. 2023*

Awards & Honors

2026 **Outstanding Paper Award,** APEC Shenzhen – Advancing with AI 2026 International Youth Event *SUSTech*

2025 **Platinum Innovator Award,** 3rd International Poster Competition for Young Researchers 2025 *UniV*

2025 **Chinese Government Scholarship (CSC),** Master's Study at Harbin Institute of Technology, Shenzhen *China*