Md Al Siam

Website | Email | Phone | LinkedIn | GitHub | Google Scholar

Education

Tuskegee University June 2024 – May 2026 (Expected)
M.Sc. in Electrical Engineering *Tuskegee, AL | CGPA: 4.00/4.00*

- **Thesis:** Hierarchical Self-supervised Learning Approaches for Automatic Radar Target Recognition
- **Advisors:** Dr. Dewan Fahim Noor & Dr. Mandoye Ndoye
- **Funding:** The NSF Institute for Artificial and Natural Intelligence (ARNI)
- **Relevant Coursework:** Machine Learning for Engineers, Data Networks & Cloud Computing, Cybersecurity Engineering Practical, Special Topics on Generative Adversarial Network, Advanced Mathematics

Rajshahi University of Engineering & Technology (RUET) Jan 2017 – Oct 2022
B.Sc. in Computer Science & Engineering *Rajshahi, Bangladesh*

- **Thesis:** Realistic Activity Recognition using Inertial Sensor Data with Deep CNN
- **Advisors:** Abu Sayeed & Dr. Md. Al Mehedi Hasan

Publications

Under Review

[1] **Siam, M.A.**, Noor, D.F., Ndoye, M., Khan, J.F. "Advancing Synthetic Aperture Radar Target Recognition through Hierarchical Self-Supervised Learning with Multi-Task Pretext Training." *Sensors Special Issue*, 2025.

Peer-reviewed Conference Papers

[1] **Al Siam, M.**, Noor, D.F. "Self-Supervised Learning for SAR Target Recognition with Multi-Task Pretext Training." *IEEE SoutheastCon 2025*. Top 5 Best Paper Finalist
DOI: https://doi.org/10.1109/SoutheastCon56624.2025.10971440

Peer-reviewed Journal Papers

[1] Abir, F.A., **Siam, M.A.**, Sayeed, A., Hasan, M.A.M., Shin, J. "Deep Learning Based Air-writing Recognition with the Choice of Proper Interpolation Technique." *Sensors*, 21(24), p.8407, 2021.
DOI: https://doi.org/10.3390/s21248407

[2] Hasan, M.A.M., Al Abir, F., **Al Siam, M.**, Shin, J. "Gait Recognition with Wearable Sensors Using Modified Residual Block-based Lightweight CNN." *IEEE Access*, 10, pp.42577-42588, 2022.
DOI: https://doi.org/10.1109/ACCESS.2022.3168019

Research Experience

Graduate Research Assistant June 2024 – Present
Tuskegee University *Tuskegee, AL*

- Developed novel hierarchical self-supervised learning frameworks for Synthetic Aperture Radar target recognition, achieving state-of-the-art performance, data efficiency, and computational efficiency

AI Research Assistant Oct 2020 – Mar 2022
MyMedicalHub International *Tampa, FL (Remote)*

- Designed and developed ML-based gait abnormality detection frameworks, leading to a patented solution
- Developed geometric algorithms for angle measurement, improving inference time by 50%
- Deployed research projects with cloud infrastructures (AWS EC2 & S3) and prepared in-house dataset for testing

Teaching Experience

Graduate Teaching Assistant Summer 2024, Summer 2025, Fall 2025
Tuskegee University *Tuskegee, AL*

- Assisted 15+ undergraduate students in COEG 456: Cybersecurity Engineering Practical
- Mentored 60+ high school students through the engineering design process, circuit assembly, and technical troubleshooting for the summer outreach program; prepared materials and lab infrastructures

Lecturer in Computer Science & Engineering Summer 2023 – Fall 2023
Northern University Bangladesh *Dhaka, Bangladesh*

- Taught CSE 2111: Data Structures, CSE 1307: Object Oriented Programming, CSE 2319: Database Management Systems, CSE 1258: Discrete Mathematics in classes of 30+ students

Honors & Awards

Presenter at AWS-MLU AI/ML Student Poster Session 2025, Amazon HQ2 (Arlington, VA) 2025

IEEE SoutheastCon 2025 Best Paper Award Finalist (Top 5), Charlotte, NC 2025

Master's Graduate Scholarship ($76,000), ECE Department, Tuskegee University 2024

8th Place among 43 teams in VU CSE Tech Fest: National Level Inter-University Programming Contest 2019

Competitive Programming: Contested in 150+ rated contests on CodeForces (Max Rating: Specialist, 1443). Multiple top-20 finishes in national-level inter-university programming contests 2018-2022

8th Position among 1M+ students in Higher Secondary Talentpool Scholarship by Bangladesh Government 2017

Industry Experience

Software Engineer Jan – Apr 2024
Samsung R&D Institute Bangladesh (SRBD) *Dhaka, Bangladesh*

- Researched Calm technology, and automation algorithms for next-generation Samsung SmartThings IoT devices

Software Engineer Oct 2022 – Mar 2023
Enosis Solutions *Dhaka, Bangladesh*

- Developed and optimized enterprise web applications with complete SDLC involvement

Selected Projects

Automated Range of Motion 2021-2022

- Built an automated range of motion (ROM) measurement application integrating 200+ active and passive exercises using pose estimation models
- Designed a distributed master-slave architecture on AWS EC2/S3 for scalable telehealth deployment

Air-Writing Recognition 2020-2021

- Created air-writing recognition system addressing variable signal length challenges through innovative interpolation techniques
- Achieved up to 100% accuracy on digit recognition across seven datasets, outperforming state-of-the-art methods

Technical Skills

Programming: Python, C/C++, Java, C#, SQL
AI/ML: PyTorch, TensorFlow, Keras, OpenCV
Web: Django REST Framework, JavaScript, TypeScript, ASP.NET, HTML, CSS, MSSQL
Others: Linux, LaTeX, Git/GitHub, AWS (EC2, S3), Azure, Jira

Service & Leadership

RUET CSE Fest 2K22: Led technical team responsible for contest infrastructure for Inter-University Programming Contest 2022

RUET Analytical Programming Lab: Mentored competitive programming problem-solving techniques 2017-2022

Machine Learning Research Group, RUET: Guided ML research methodologies and scientific writing 2020-2022