

Swagotam Malakar

Computer Science & Engineering Student

United International University
Dhaka, Bangladesh
✉ smalakar2231068@bscse.uui.ac.bd
ID No: 011 223 1068 | LinkedIn

Education

- 2022–2026 (Expected) **B.Sc. in Computer Science & Engineering**, United International University, Dhaka, Bangladesh.
- 2020 **Higher Secondary Certificate (HSC)**, Govt. Science College, Dhaka, Bangladesh, GPA: 5.00/5.00.
- 2018 **Secondary School Certificate (SSC)**, Jury Govt. Model High School, Sylhet, Bangladesh, GPA: 5.00/5.00.

Experience

- Nov 2024–Present **Researcher**, Center for Emerging Networks and Technologies Research (CENTeR), United International University, Dhaka.
- Conducting research on emerging network technologies, focusing on security, scalability, and performance optimization
 - Collaborating on research publications and technical reports
 - Developing simulation models for network performance analysis
 - Working on natural language processing projects for Bengali language
- 2018–2020 **Quizzer**, Govt. Science College Science Club, Dhaka, Bangladesh.
- Participated in and won multiple science and technology quiz competitions
 - Represented the institution at inter-college quiz contests
 - Achieved notable positions in divisional and national level competitions

Research & Publications

Swarabyanjan, Weak Supervision for Bengali News Headline-Article Consistency with Cross-Domain Evaluation.

Manuscript in final preparation for ICCIT 2025

Abstract: Addressing the challenge of sensationalized headlines in Bengali digital media affecting 300M+ speakers through a pragmatic weak supervision framework.

Key Contributions:

- Developed weak supervision pipeline leveraging multilingual sentence embeddings to automatically generate training labels for 190,982 articles
- Implemented Siamese neural architecture achieving 90.77% accuracy on Prothom Alo dataset
- Demonstrated robust cross-domain generalization with 88.87% accuracy across eight different news sources
- Achieved processing efficiency of 80+ articles/second on single GPU
- Statistical validation confirms model learns semantic patterns rather than publication-specific features ($p < 0.05$)

Technologies: Python, TensorFlow, Multilingual BERT, Siamese Networks, NLP

Status: Code and models to be released upon publication acceptance

Taritha, *Optimizing Associative Rule Mining: A Pruning Reduction Approach.*

Research in Progress

Objective: Developing innovative framework to optimize associative rule mining through novel pruning reduction techniques.

Current Work:

- Designing strategies to minimize computational overhead in large-scale datasets
- Exploring advanced pruning approaches for Apriori and FP-growth algorithms
- Benchmarking performance against traditional mining techniques
- Target: 40% reduction in processing time while maintaining accuracy

Major Projects

Jun 2025–Present	AmarShohor – Smart City Platform for Urban Citizens, Team Lead. Overview: Comprehensive smart city platform integrating civic engagement, real-time services, and commercial solutions Key Features Implemented: <ul style="list-style-type: none">○ Civic Engagement: Issue reporting system, community forum, NGO/utility connectivity (DESCO, TITAS), instant blood donation matching, green city initiatives○ Real-time Services: SOS emergency alerts, traffic obstruction notifications, dynamic map formulation with ML-powered priority management○ Commercial Services: On-demand home service marketplace (in development) Technical Architecture: <ul style="list-style-type: none">○ Frontend: React Native for cross-platform mobile application○ Backend: Node.js with Express.js, RESTful API design○ ML Infrastructure: Django with TensorFlow for intelligent routing and priority management○ Databases: MongoDB for flexible data, PostgreSQL for structured data○ Integration: Google Maps API, Firebase Cloud Messaging Impact: Empowering urban communities with instant access to essential services, fostering civic engagement Technologies: React Native, Node.js, Express.js, Django, MongoDB, PostgreSQL, Google Maps API, Firebase, Git
Feb 2025–Jun 2025	LifeLink – Comprehensive All-in-One Service Platform, Full-Stack Developer. Overview: Digital platform unifying 6 essential services for Bangladesh (healthcare, shopping, education, employment, housing, vehicles) Technical Achievements: <ul style="list-style-type: none">○ Built custom MVC architecture supporting 8 service modules with 156 API endpoints○ Designed and optimized 39 database tables handling complex service relationships○ Implemented secure payment gateway integration (bKash/Nagad/Rocket) with transaction logging○ Developed multilingual support system and AI-powered chatbot for user assistance○ Achieved 2.3s average load time supporting 10,000+ concurrent users○ Wrote 45,000+ lines of production-ready code following industry best practices Development Process: <ul style="list-style-type: none">○ Managed 4-month Agile development cycle using JIRA○ Conducted code reviews and maintained 90%+ code coverage○ Received exceptional feedback during stakeholder demonstrations Technologies: PHP 7.4+, MySQL 5.7+, JavaScript (ES6+), Tailwind CSS, Apache/Nginx, Git, JIRA, CSRF protection
Oct 2024–Jan 2025	Blockchain Supply Chain – Pharmaceutical Supply Chain Integrity, Blockchain Developer. Demo Video Available Problem Addressed: Counterfeit drugs affecting 15% of pharmaceutical supply in Bangladesh Solution Implemented: <ul style="list-style-type: none">○ Developed Ethereum-based blockchain solution for end-to-end drug traceability○ Created smart contracts ensuring immutable record keeping and regulatory compliance○ Built React.js web interface for stakeholder interaction○ Integrated QR code system for consumer-level drug authentication Impact: Potential to reduce counterfeit drugs by 70%, improve patient safety, and ensure regulatory adherence Technologies: Solidity, Web3.js, React.js, Node.js, IPFS, Ethereum, Truffle Suite

Professional Certifications

Programming & Software Development

- **Stanford CS106A - Code in Place** - Stanford University (2024)
- **Software Engineer Certificate** - HackerRank (2024)
- **CLA □C Programming Language Certified Associate** - Cisco (2024)
- **Python (Basic) Certificate** - HackerRank (2024)
- **Java Programming: Complete Beginners to Advanced** - Udemy (2024)
- **Solving LeetCode's Top Interview Questions in Java** - Udemy (2024)

Networking, Security & DevOps

- **CCNA: Introduction to Networks** - Cisco Networking Academy (2024)
- **Cybersecurity Essentials** - Cisco Networking Academy (2024)
- **DevOps for Engineers** - Center for Emerging Networks and Technologies Research (2024)
- **NDG Linux Essentials** - Cisco Networking Academy (2024)

Technical Skills

Programming Languages

- **Proficient:** C/C++ (3+ years), Python (2+ years), Java (2+ years), JavaScript (ES6+)
- **Working Knowledge:** PHP 7.4+, Solidity, Shell Scripting

Web & Mobile

- **Frontend:** React.js, React Native, HTML5, CSS3, Tailwind CSS, Bootstrap
- **Backend:** Node.js, Express.js, Django, PHP, RESTful API Design
- **Mobile:** React Native, Progressive Web Apps

Databases & Cloud

- **Databases:** MySQL, PostgreSQL, MongoDB, Redis
- **Cloud Services:** AWS (EC2, S3), Firebase, Google Cloud Platform
- **DevOps:** Docker, Jenkins, GitHub Actions, CI/CD Pipelines

Specialized Technologies

- **AI/ML/DL:** TensorFlow, Scikit-learn, NLP, Computer Vision, AGI Concepts
- **Blockchain:** Ethereum, Smart Contracts, Web3.js, Truffle, IPFS
- **Networking:** TCP/IP, OSI Model, Network Security, Wireshark
- **Version Control:** Git, GitHub, GitLab, Collaborative Development

Development Tools

- **IDEs:** VS Code, IntelliJ IDEA, PyCharm, Eclipse
- **Project Management:** JIRA, Trello, Agile/Scrum Methodologies
- **API Testing:** Postman, Swagger, REST Client
- **Other Tools:** Microsoft 365, LaTeX, Markdown

Honours & Awards

Academic Excellence

- **Board Scholarship** - Received in PSC (2012), JSC (2015), and SSC (2018) examinations from Sylhet Education Board for outstanding academic performance
- **Perfect GPA** - Achieved 5.00/5.00 in PSC, JSC, SSC and HSC examinations
- **Best Student Award** - during National Education Week (2018)

STEM

- Competitions
- **Science Olympiad** - Multiple awards at district and divisional levels (2016-2018)
 - **Inter-College Quiz Championship** - Multiple awards at National levels (2018-2019)

Extracurricular Activities

Technical

- Communities
- **UIU Competitive Programming Community** - Active Member (2025-Present)

Debating &

- Public Speaking
- Active participant in debate competitions, honing skills in argumentation and public speaking.
 - Regular contributor to essay writing competitions on various topics.

Social Service

- **Bangladesh Scouts** - Active member (Jan 2010 - May 2018, 8 yrs 5 mos)
 - Participated in community service projects, attending camps and social welfare activities
 - Earned multiple proficiency badges and leadership positions
 - Engaged in environmental conservation and disaster relief operations

Creative

- Pursuits
- **Bengali Novelist** - Authoring and publishing Bengali fiction (novels and short stories) that explore themes of social philosophy and human identity.
 - **Avid Reader** - Extensive reading across literature, science, philosophy, and history

Language Proficiency

English **Professional Working Proficiency**

Written: Excellent | Spoken: Fluent | Reading: Excellent

Bangla **Native Speaker**

Mother tongue

Hindi **Conversational**

Written: Basic | Spoken: Good | Reading: Basic

Interests

- Technology Artificial General Intelligence (AGI), Machine Learning (ML), Deep Learning (DL), Computer Vision, Blockchain, Cybersecurity, IoT
- Research Natural Language Processing, Bengali Language Computing, Data Mining, AI Ethics
- Sciences Astrophysics, Theoretical Physics, Applied Mathematics
- Personal Reading novels, writing fiction and essays, listening to music, philosophy of science, history

References

Mr. Mohammad Mamun Elahi

Assistant Professor, Dept. of CSE
United International University
Email: mmelahi@cse.uiu.ac.bd

Dr. Ohidujjaman

Assistant Professor, Dept. of CSE
United International University
Email: ohidujjaman@cse.uiu.ac.bd

Last updated on September 3, 2025