

Mahir Shahriar Tamim

EXPLAINABLE & RESPONSIBLE AI · COMPUTER VISION, NLP & AGENTIC SYSTEMS

Dhaka, Bangladesh

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Research Profile

I study how to make deep learning reliable when the data, modalities, or deployment conditions are imperfect. My work covers **multimodal fusion**, adapting **vision-language models under distribution shift**, and checking whether **language models and agents** actually behave as claimed. I have **six peer-reviewed papers**, including three in Q1 journals, AACL 2026 and a NeurIPS 2026 workshop paper, and a **first-authored ICLR 2027 submission** under review. I am seeking a **thesis-based M.Sc. or Ph.D.** position in machine learning.

Research Interests

- **Multimodal and vision-language learning** — representation learning across modalities, robustness and adaptation under distribution shift.
- **Language models and agents** — evaluation, reasoning, efficient and small models, and reliable tool use.
- **Trustworthy machine learning** — uncertainty, calibration, and interpretability, with applications in healthcare.

Education

North South University

Dhaka, Bangladesh

B.SC. IN COMPUTER SCIENCE AND ENGINEERING

Sept. 2021 - Dec. 2025

- CGPA: **3.86/4.00** (Mark percentage: 96.5%, $\approx$ **Top 2%**) — [Grading Policy].
- Awarded a **100% Merit Scholarship** for outstanding academic performance (Jan. 2024).
- Undergraduate thesis: **PNEUMA** — Perceptual Noesis for Episodic Universal Memory Architecture. A model-agnostic long-term video memory system for egocentric QA, reaching **72.8%** NextQA zero-shot accuracy and **98%** recall on temporal BETWEEN queries. Supervisor: Dr. Nabeel Mohammed.

Publications

6 peer-reviewed papers (3 journal, 2 conference, 1 workshop) at venues including **Knowledge-Based Systems, Neurocomputing, PLOS ONE, AACL, and a NeurIPS workshop**; first or joint-first author on **4**. * equal contribution; my name in **bold**; venue tag on the left. Full list on [Google Scholar](#).

Journal and Conference Papers

Neurocomp. 2026

Mahir Shahriar Tamim, S. Khan, M. S. Alim, T. A. Khan, S. Rahman, N. Mohammed. “CAT-GS: Balanced Multimodal Learning via Calibrated Gating and Fusion Surgery.” **Neurocomputing** (Elsevier), 2026. [Q1] [IF: 6.7] *Accepted for publication.* [arXiv]

AACL 2026

M. S. Alim*, **Mahir Shahriar Tamim***, T. A. Khan, S. Khan, R. F. Duti, S. Z. Ridoy, M. A. Moni. “Can LLMs Follow the Pulse of a Crisis? Evaluating Crisis Sentiment in Bangladesh’s July Uprising.” **AACL 2026**, Hengqin, China. Introduces the **UnRestSent200K** dataset. [PDF]

PLOS ONE 2025

Mahir Shahriar Tamim, M. S. Alim, M. Rahman, T. A. Khan, M. M. Anwar. “Ensemble and Temporal Feature-Based Framework for Rainfall Classification in Bangladesh.” **PLOS ONE**, 2025. [Q1] [IF: 2.6] [Paper]

KBS 2025

M. S. Alim, **Mahir Shahriar Tamim**, S. Sarkar, M. A. Yousuf, A. S. Al-Moisheer, S. A. Alyami, M. A. Moni. “Multi-Teacher Knowledge Distillation and Ensemble Algorithm for Efficient Brain Tumor Classification in Resource-Constrained Environments with Explainable AI.” **Knowledge-Based Systems** (Elsevier), 2025. [Q1] [IF: 8.0] [Paper]

ICIT 2025

M. S. Alim, **Mahir Shahriar Tamim**, M. Rahman, T. A. Khan, M. M. Anwar. “When a Nation Speaks: Machine Learning and NLP in People’s Sentiment Analysis During Bangladesh’s 2024 Mass Uprising.” **IEEE ICIT 2025**. [arXiv]

Workshop Papers

NeurIPS-W 2026

M. S. Alim*, **Mahir Shahriar Tamim***, S. Z. Ridoy, S. Khan, A. T. Wasi. “Harness Recession: When Small Models Outgrow Their Scaffolding.” **SLM-Agents: 1st NeurIPS Workshop on SLMs for Agentic Systems**, 2026.

Under Review and in Preparation

ICLR 2027

Mahir Shahriar Tamim, M. S. Alim, A. T. Wasi, S. Z. Ridoy, M. Nesa, M. A. Yousuf, [A. Lamb](#) (Tsinghua University), M. A. Moni. "Retrieval Geometry Shapes Cache-Based Clip Adaptation." *Under review, ICLR 2027.* [CORE: A*] [arXiv]

In Prep.

"SphereAD: Hyperspherical Self-Reference for Training-Free Anomaly Localization Across Diverse Domains." *In preparation.*

In Prep.

"When Bytes Take It All: CLIPByte for Tokenizer-Free Captioning via Byte-Level Vision–Language Bridging." *In preparation.*

Research Experience

Computational Intelligence and Operations Laboratory (CIOL)

[Remote](#)

RESEARCH INTERN — VISION, LANGUAGE & AGENTIC SYSTEMS

May 2026 - Present

- Supervised by [Dr. Dong-Kyu Chae](#) (Hanyang University); training-free visual anomaly localization, LLM evaluation, and reliable tool-using agents.
- Lead author on **SphereAD** (in preparation), training-free anomaly localization that transfers across domains; co-first author on **Harness Recession** (NeurIPS 2026 workshop), on when small language models outgrow their scaffolding.

Charles Sturt University

[Remote](#)

RESEARCH ASSISTANT — AI FOR HEALTHCARE & NEUROIMAGING

Dec. 2025 - May 2026

- AI for healthcare and neuroimaging, supervised by [Dr. Mohammad Ali Moni](#) with [Dr. Mohammad Abu Yousuf](#).
- Co-authored **multi-teacher knowledge distillation** for explainable brain-tumor classification (*Knowledge-Based Systems*).
- Co-first author on the **AACL 2026** crisis-sentiment study; explored **image reconstruction from brain activity** with conditional diffusion.

NSU Machine Intelligence (MI) Lab & RobotBulls

[Hybrid: Dhaka & Luxembourg](#)

RESEARCH ASSISTANT — COMPUTER VISION / AI-ML ENGINEER

Mar. 2025 - Nov. 2025

- Supervised by [Dr. Nabeel Mohammed](#) and [Dr. Shafin Rahman](#); turned research prototypes into real-time computer-vision systems with teams in Luxembourg and Hong Kong.
- Built pipelines for facial morphing, gesture rendering, diffusion-based lip sync, and 3D Gaussian representations.
- GPU-parallelized inference and WebRTC streaming for low-latency interaction. [Demo]

Industry Experience

bKash

[Dhaka, Bangladesh](#)

SOFTWARE ENGINEER

Oct. 2026 - Present

- Backend team at Bangladesh's leading mobile financial service (MFS) provider, working on the **KYC** and **notification** services.
- Java microservices** in an event-driven architecture, with **Apache Kafka** for asynchronous messaging, REST APIs, and service-to-service integration.

SysModeler.ai

[USA \(Remote\)](#)

BACKEND ENGINEER

Aug. 2026 - Oct. 2026

- Backend for an AI platform that turns documents and prompts into editable SysML v2 models.
- Microservices, asynchronous pipelines, and PostgreSQL/MongoDB schemas for versioned models; Python, Go, and Java with Docker and CI/CD.

Obby LLC

[USA \(Remote\)](#)

PRODUCT ENGINEER

Jan 2026 - Jul. 2026

- Built production **multi-agent workflows** and **AI voice agents** with tool orchestration and MCP-based automation for multi-tenant SaaS.
- Led cross-functional engineering, operations, and product work on B2B review automation and workflow automation.
- Blog: [Multi-Tenant Architecture for AI Voice Agents](#).

Teaching & Leadership

Department of Electrical and Computer Engineering, North South University

Dhaka, Bangladesh

UNDERGRADUATE TEACHING ASSISTANT — CSE 373: DESIGN AND ANALYSIS OF ALGORITHMS

Jan. 2024 - Dec. 2025

- Prepared lecture and tutorial notes and supporting materials; conducted tutorial sessions outside class hours.
- Proctored exams and graded homework, programming assignments, and assessments.
- Mentored **600+** students through office hours, tutorials, and exam preparation.

NSU Problem Solvers Bootcamp & Intra-NSU Programming Contests

Dhaka, Bangladesh

INSTRUCTOR & PROBLEM SETTER — COMPETITIVE PROGRAMMING

- Instructor, NSU Problem Solvers Bootcamp: taught algorithms and contest strategies; mentored students.
- Problem Setter, Intra-NSU Programming Contests: authored problems, constraints, test cases, and editorials.

Honors & Awards

ACADEMIC

2024 **Merit Scholarship (100%)**, North South University, for outstanding academic performance

Dhaka, Bangladesh

COMPETITIVE PROGRAMMING

Codeforces Expert (max rating 1650), [Codeforces Profile](#)

2025 **18th / 130 teams**, AUST IUPC (*NSU_PyramicSchemers*)

2025 **53rd / 313 teams**, ICPC Asia Dhaka Regional (*NSU_EktaNaamDaoFast*)

2024 **67th / 300 teams**, ICPC Asia Dhaka Regional (*NSU_PyramicSchemers*)

2024 **29th / 196 teams**, JU National Collegiate Programming Contest (NCPC) (*NSU_OneLastTime*)

Technical Skills

Programming Python, C, C++, Java, JavaScript, TypeScript, Go, SQL

ML Frameworks PyTorch, TensorFlow, Hugging Face Transformers, timm, scikit-learn, OpenCV, NumPy, Pandas, Matplotlib

Systems & Tooling Next.js, MERN, Socket.IO, REST, WebRTC, Git, Docker, CI/CD, PostgreSQL, MongoDB, MCP, LaTeX

Linguistic Proficiency

Bengali (Native) | English (C1)

IELTS Academic Overall: 8.0

Reading: 9.0 Listening: 8.5 Writing: 7.5 Speaking: 6.5

References

Dr. Nabeel Mohammed, Ph.D. (Monash University)

Dhaka, Bangladesh

ASSOCIATE PROFESSOR, DEPT. OF ELECTRICAL AND COMPUTER ENGINEERING, NORTH SOUTH UNIVERSITY

- Undergraduate thesis supervisor (PNEUMA); co-author on *Neurocomputing* (CAT-GS).
- Email: nabeel.mohammed@northsouth.edu.

Dr. Mohammad Ali Moni, Ph.D. (University of Cambridge)

Australia

PROGRAM LEAD, PROGRAM FOR AI AND DIGITAL HEALTH TECHNOLOGY, CHARLES STURT UNIVERSITY

- Co-author on *Knowledge-Based Systems* and AACL 2026.
- Email: mmoni@csu.edu.au.

Dr. Mohammad Abu Yousuf, Ph.D. (Saitama University, Japan)

Dhaka, Bangladesh

PROFESSOR, INSTITUTE OF INFORMATION TECHNOLOGY, JAHANGIRNAGAR UNIVERSITY

- Co-author on *Knowledge-Based Systems*; former Professor, North South University.
- Email: yousuf@juniv.edu.