

Mohammad Saqib Hasan

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Work Experience

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| Applied Scientist Intern | Amazon | Jun 2026 – Sep 2026 |
| <ul style="list-style-type: none">Developed a Retrieval-Augmented Generation (RAG) system for an LLM-based question-generation module used in customer-facing chatbots within Amazon Worldwide Returns and ReCommerce.Improved over production baseline by 7.1%, while reducing input and retrieval latency by 73% and 50% respectively. | | |
| Applied Scientist Intern | Amazon | May 2025 – Aug 2025 |
| <ul style="list-style-type: none">Built multi-agent LLM pipelines for structured knowledge creation and knowledge-augmented database analysis within the Delivery Experience Speed AI team.Reduced person-hour costs for analysis formulation and communication with business stakeholders by 83%. | | |
| Research Engineer | BUET | Nov 2018 – Dec 2020 |
| <ul style="list-style-type: none">Developed deep-learning methods for data-efficient fake-news detection that uses only 4% of original training data and neural compression algorithms achieving 5–35× compression; received multiple ICT Innovation Fund research grants totaling \$36,000. | | |

Education

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| Stony Brook, NY | Stony Brook University | Aug 2021 – Present |
| <ul style="list-style-type: none">M.Sc. in Computer Science.Ph.D. in Computer Science. Advisor: Niranjan Balasubramanian.Research: Code Generation, Retrieval-Augmented Generation, LLM Alignment, Reinforcement Learning | | |
| Dhaka, Bangladesh | BUET | Jul 2014 – Oct 2018 |
| <ul style="list-style-type: none">B.Sc. in Computer Science and Engineering. Advisor: Muhammad Abdullah Adnan | | |

Research & Publications

Selected Publications

- Teaching an Old LLM Secure Coding: Localized Preference Optimization with Distilled Preferences.** *ACL 2025*.
- ProST: Progressive Sub-task Training for Pareto-Optimal Multi-agent Systems Using Small Language Models.** *AACL 2025*.
- MuSciClaims: Multimodal Scientific Claim Verification.** *AACL 2025*.
- Handling Open-Vocabulary Constructs in Formalizing Specifications: Retrieval Augmented Parsing with Expert Knowledge.** *COLM 2024*.
- Compressed Neural Architecture Utilizing Dimensionality Reduction and Quantization.** *Applied Intelligence, Springer*.
- Truth or Lie: Pre-emptive Detection of Fake News in Different Languages through Entropy-Based Active Learning and Multi-Model Neural Ensemble.** *ASONAM 2020*.
- Neuro-scientific Analysis of Weights in Neural Networks.** *International Journal of Pattern Recognition and Artificial Intelligence*.
- Syntax is easy, semantics is hard: Evaluating LLMs for LTL translation** ACM SecDev 2026

Selected Projects

- Data-Efficient Named Entity Recognition:** Combined weak supervision and active learning to achieve supervised-learning-level accuracy using only **40%** of labeled data.
- COVID-19 Vaccination Forecasting:** Modeled vaccination rates across U.S. counties using public and social-media data, predicting future vaccination rates within a **1% error margin**.

Grants, Service & Awards

- Researcher on the **DARPA SciFy** project for scientific claim verification.
- Researcher on **NAIRR Grant NAIRR210140**, supporting the development of efficient LLM agents.
- Recipient of the **SUNY Research Foundation Academic Fellowship**, Summer 2022.
- Reviewer for *ACL Rolling Review (ARR)*, *Neural Processing Letters*, and *Artificial Intelligence*.