Alif Al Hasan

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Cleveland, Ohio - 44106, USA

Education

- **Ph.D. in Computer Science** — *August 2025 - Present*
  Case Western Reserve University — Cleveland, OH, USA
  - CGPA: 4.00/4.00
  - Advisor: Dr. Sumon Biswas
- **M.S. in Computer Science and Engineering** — *July 2023 - December 2024*
  Jahangirnagar University — Dhaka, Bangladesh
  - CGPA: 3.85/4.00
- **B.S. in Computer Science and Engineering** — *February 2018 - June 2023*
  Jahangirnagar University — Dhaka, Bangladesh
  - CGPA: 3.63/4.00

Research Experience

- **Graduate Research Assistant** — *August 2025 - Present*
  Case Western Reserve University, Cleveland, OH, USA — Advisor: Dr. Sumon Biswas
  - Conducting research on **Trustworthy AI for Software Engineering**, focusing on the safety, robustness, and responsibility of LLM-generated code.
  - Analyzing state-of-the-art LLMs to identify **safety risks** and **reliability gaps** in automated code generation pipelines.
- **Remote Research Assistant** — *May 2024 – July 2025*
  Missouri University of Science and Technology, Rolla, MO, USA — Advisor: Dr. Mia Mohammad Imran
  - **Learning Programming in Informal Space** [C.1]: Processed 83,000 posts using Llama-3.1-70B to model novice emotions in online communities, identifying key affective states and proposing five categories of affect-aware support.
  - **CDDRefactorER**: Developed an AI-guided refactoring framework benchmarked on MBPP, achieving 71% reduction in functional errors and a 17% decrease in cognitive load to enhance novice comprehension.
- **Remote Research Intern** — *January 2025 – February 2025*
  University of Maryland, Baltimore County, Baltimore, MD, USA — Advisor: Dr. Tarannum Shaila Zaman
  - **LLPut** [W.1]: Conducted the evaluation of LLMs for extracting failure-inducing inputs by constructing a benchmark of 206 verified Linux *coreutils* cases and comparing BERT against open-source models (LLaMA, Qwen) using BLEU-based metrics.
- **Research Assistant** — *November 2023 - July 2024*
  Jahangirnagar University, Dhaka, Bangladesh — Advisor: Dr. Musfique Anwar
  - **SEAGET** [J.1]: Proposed a Seasonal and Active hours-guided Graph-Enhanced Transformer that integrates temporal dynamics and operational constraints, outperforming state-of-the-art baselines with a **13.7% improvement in Acc@1**.

Publications

C=Conference, J=Journal, W=Workshop

* Equal Contribution

[C.1] **[ICSE-26] [Rank=A*] A. A. Hasan***, S. Saha*, and M. M. Imran. "Learning Programming in Informal Spaces: Using Emotion as a Lens to Understand Novice Struggles on r/learnprogramming". In: *Accepted at ICSE-SEET* (2026)

[J.1] **A. A. Hasan** and M. M. Anwar. "SEAGET: Seasonal and active hours guided graph enhanced transformer for the next POI recommendation". In: *Array* 26 (2025), p. 100385. DOI: 10.1016/j.array.2025.100385

[W.1] **A. A. Hasan**, S. Saha, M. M. Imran, and T. S. Zaman. "LLPut: Investigating Large Language Models for Bug Report-Based Input Generation". In: *Proceedings of the 33rd ACM International Conference on the Foundations of Software Engineering*. FSE Companion '25. Norway, 2025, pp. 1652–1659. DOI: 10.1145/3696630.3728701

Problem Solving Excellence

- **Quantitative Aptitude:** **GRE Quantitative Reasoning: 170/170** (Perfect Score).
- **Algorithmic Profile:** Codeforces Max: **2033** (Top 2%); CodeChef Max: **2084** (Top 2%); Solved **4500+** algorithmic problems across online judges.
- **ICPC Achievements:** Ranked **3rd/165** in ICPC Asia Dhaka Regional '21; **7th/1640** in ICPC Dhaka Preliminary '21; **17th/58** in Asia West Continent Finals '21.
- **National Contests:** Ranked **1st/57** in MBSTU IDPC '20; **12th/114** in BUET IUPC '22; **12th/97** in RUET IUPC '22; **14th/105** in AUST IUPC '22.

Teaching Experience

- **Graduate Teaching Assistant** *August 2025 - December 2025*
  Case Western Reserve University, Cleveland, OH, USA CSDS 325/425: Computer Networks
  - Supported a class of 65 undergraduate and graduate students, facilitating lab sessions and helping in complex simulation projects.
  - Managed course logistics including grading, discussion facilitation, and providing one-on-one academic support to enhance student comprehension.
- **Teaching Assistant** *December 2021 - April 2024*
  Jahangirnagar University, Dhaka, Bangladesh Data Structures and Algorithms
  - Conducted extra-curricular training sessions for a cohort of 50 students on Data Structures and Algorithms, guiding them through advanced problem-solving strategies.
  - Mentored university teams for national-level programming contests, providing personalized feedback and debugging optimization techniques.
- **Competitive Programming Mentor** *August 2023 - December 2023*
  Netrokona University, Netrokona, Bangladesh Data Structures and Algorithms
  - Designed and executed a weekly curriculum for 30 students, focusing on algorithmic problem-solving to prepare them for ICPC and IUPC contests.
  - Delivered personalized mentorship and code review, significantly improving students' debugging skills and contest readiness.

Projects

- **Fairness Analysis of Text-to-Image Models in Negative Role Depictions** *December 2025*
  Tools: Python, PyTorch, Diffusers, Stable Diffusion, Flux, FairFace [GitHub]
  - Led the quantification of T2I bias in negative roles, revealing a ∼95% male skew; engineered a FairFace auditing pipeline to measure SPD and Bias Amplification.
  - Demonstrated that prompt-based mitigation reduces racial and age bias amplification, though gender skew remains persistent across models.
- **Arabic2English: Bidirectional Translation Web App** *March 2024*
  Tools: Gradio, PyTorch, Transformers, CI/CD [Web]
  - Developed a bidirectional Arabic-English translation web app with a comprehensive **model card** and automated CI/CD deployment pipelines.
- **EPL Top5 Emblem Classifier: Image Classification** *January 2024*
  Tools: TensorFlow, NumPy, SciPy, Gradio [Web]
  - Built a web-based Premier League emblem classifier using automated CI/CD workflows, documenting performance in a detailed **model card**.

Honors and Awards

- **Government Scholarship for Academic Excellence** *October 2025*
  Ministry of Education, Bangladesh
  - Awarded by the Government of Bangladesh for demonstrating outstanding academic performance at Jahangirnagar University.
- **National Science and Technology (NST) Fellowship** *February 2025*
  Ministry of Science & Technology, Bangladesh
  - Received a competitive fellowship grant of **$700** to support M.Sc. thesis research, recognizing scientific research potential.
- **Dean's Scholarship** *February 2018 – December 2024*
  Jahangirnagar University
  - Secured the prestigious Dean's Scholarship **five times** during B.Sc. and M.Sc. tenure for maintaining exceptional academic standing.

Technical Skills

- **Programming Languages:** Python, C/C++, Java, SQL, JavaScript
- **AI & Machine Learning:** PyTorch, TensorFlow, Hugging Face Transformers, Diffusers, Scikit-learn, Pandas, NumPy
- **Generative AI & LLMs:** Large Language Models (Llama, Qwen, BERT), Stable Diffusion, Flux, Prompt Engineering, RAG
- **Web Technologies:** Gradio, Spring Boot, Node.js, Express.js, Bootstrap, REST APIs
- **Database Systems:** MySQL, MongoDB, RoomDB, SQLite
- **DevOps & Tools:** Git, Linux/Bash, CI/CD Pipelines, LaTeX, Vim
- **Research Areas:** Software Engineering (SE), AI Safety & Robustness, Automated Program Repair, Bias Analysis

Volunteer Experience

- **Instructor: Workshop on CP Strategies** *November 2024*
  Bangladesh Digital University
  ◦ Delivered a session on contest tactics and problem-solving techniques to **over 90 participants**, organizing 2 contests for hands-on practice.

- **Judge, Organizer & Trainer: CodeElevate Camp 2023** *September 2023*
  Jahangirnagar University [🌐]
  ◦ Conducted a technical session on graph algorithms for **100+ participants** and authored a problem for the main contest round.

- **Judge & Organizer: Brain Muscle Checking Contest 2022** *January 2022*
  Jahangirnagar University [🌐]
  ◦ Served as a problem setter, authoring 2 algorithmic challenges for the main round of the competition.