Md Athikul Islam

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Summary

Ph.D. candidate with 7+ years of software engineering experience in robust design, **ML**, and scalable application development. Proficient in **C**, **C++**, **Python**, PyTorch, TensorFlow, with expertise in NLP defenses, adversarial research, and **Linux kernel-swapping policies**. Developed high-performance applications handling thousands of concurrent transactions per second, implemented asynchronous tasks, and built scalable **NoSQL** solutions to increase client engagement, with experience using **Google Cloud Platform** and **AWS**.

Education

Boise State University, Boise, ID, USA
Ph.D. in Computer Science, CGPA: 3.96 — 2021 – Present
Anticipated Graduation: 2025
Relevant Coursework: Software Engineering, Operating Systems, Algorithms, Machine Learning, Databases

Pabna University of Science and Technology, Pabna, Bangladesh
B.Sc. in Computer Science and Engineering, CGPA: 3.71 — 2008 – 2013

Professional Experience

Graduate Research Assistant
AI-Based Security Lab, Boise State University, Boise, ID, USA — Aug 2021 – Present

- Implemented a **Linux kernel-swapping policy**, boosting system performance by around 30% compared to traditional policies.
- Researching **adversarial attacks in NLP** and developing the GenFighter defense strategy, improving model robustness by +41.6% in accuracy and reducing attack success rates by +37.0%.
- Developing **LLMs** and **Reinforcement Learning-based attack strategies** to generate realistic user comments that outperform state-of-the-art fake news detection evasion methods.
- Assisting in teaching **Operating Systems and Algorithms**, mentoring undergraduate students.
  Technologies: C, C++, Python, PyTorch, TensorFlow, Flask, Django, Docker, Git, Linux, Bash, CI/CD.

Senior Software Engineer
Impel IT Solutions, Dhaka, Bangladesh — Sep 2016 – Jul 2021

- Led the design and development of Eyevestor, a **GCP-based** share funding platform that improved user engagement by 70% through responsive UI and scalable backend systems. Developed **atomic, async services** handling thousands of transactions per second with Firebase integration.
  Technologies: Python, Flask, TypeScript, Angular, Google Cloud Platform, NoSQL, REST APIs, CI/CD.

Software Engineer
Hard-Won International Technologies Bangladesh LTD., Dhaka, Bangladesh — Mar 2015 – Aug 2016

- Developed an **IoT-based** Android bus ticketing system that enhanced public transportation accessibility through **real-time transaction-based data**, providing a highly scalable solution for fare payment.
  Technologies: Python, Django, Django REST Framework (DRF), PostgreSQL, Android, REST APIs, SQLite.

Freelance Full Stack Developer (Part-time)
Upwork Global Inc. (Remote) — Apr 2013 – Feb 2015

- Worked on **AI-based chat systems, medical systems**, and numerous full-stack and backend development projects, achieving top-rated freelancer status with a 100% job success rate.
  Technologies: Python, Tensorflow, Celery, JavaScript, Django, Flask, MySQL, SQLite, Docker, HTML, CSS, Git.

Technical Skills

- **Core Competencies:** RESTful APIs, Agile Development, CI/CD, OOP, ML, NLP, Gen AI, Reinforcement learning
- **Programming Languages:** Python, C++, C, Java, JavaScript, TypeScript, PHP
- **Frameworks/Libraries:** PyTorch, TensorFlow, LLMs, RAG, Django, Flask, Angular, React, NLTK, Pandas, Docker, Apache, Nginx, Git, Celery, Bootstrap, CSS
- **Databases:** PostgreSQL, MySQL, Google Datastore (NoSQL), SQLite
- **Operating Systems:** Unix, Linux, Windows
- **Cloud Platforms:** AWS, Google Cloud Platform, Firebase, Heroku

Research Publications

- **GenFighter: A Generative and Evolutive Textual Attack Removal**
  MA Islam, E Serra, S Jajodia. ACM Transactions on Intelligent Systems and Technology (Under Major Review)
- **Inconsistent Reasoning Attacks to Identify Weaknesses in Automatic Scientific Claim Verification Tools**
  MA Islam, N Ellison, B Lakha, E Serra. (In preparation)
- **Generating Realistic Adversarial User Comment Attacks to Evaluate the Robustness of Fake News Detectors**
  C Underwood, MA Islam, E Serra, F Spezzano. (Under Review)
- **Graph-LLM: Natural Language Explainer for Anomalous Cyber Events**
  B Lakha, MA Islam, E Serra. (In preparation)
- **Automatic Pull Request Description Generation Using LLMs: A T5 Model Approach**
  MN Sakib, MA Islam, MM Arifin. Accepted at AIBThings 2024. doi:10.48550/arXiv.2408.00921

Selected Projects

- **Linux Kernel Swapping Policy:** Designed an optimized kernel management strategy, improving system performance by 30%.
- **GenFighter (Novel NLP Defense):** Developed a robust defense strategy for adversarial attacks, improving model accuracy by +41.6% and reducing attack success by +37.0%.
- **Eyevestor:** Led the design and development of a share funding platform, improving user engagement by 70% with scalable backend services and Firebase integration.
- **PrismERP:** Built a comprehensive ERP system to streamline business processes and integrate key modules for efficient management.
- **FLEXANSWER Chatbot:** Created an NLP-based virtual assistant to improve customer support with efficient automated responses.

Additional Activities

- 1st Place – MBSTU Inter-University Programming Contest, 2013
- 5th Place – Jagannath University CSE Carnival Programming Contest, 2013