

ANISHA ISLAM

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EDUCATION

Master of Science in Computing Science, University of Alberta Expected 2024
GPA: 3.9

Relevant Coursework: Reinforcement Learning I, Software Analytics: ML and SE, Image Registration: Theory and Practice, Introduction to KDD & Data Mining.

Supervisor: [Dr. Abram Hindle](#)

Bachelor of Science in Computer Science and Engineering, Bangladesh University of Engineering and Technology (BUET) 2017 - 2022

Graduated with Honours (CGPA: 3.81)

Thesis: Cross-city Deep Transfer Learning Model for Crime Prediction, Supervised by: [Dr. Tanzima Hashem](#)

PUBLICATION

1. **Anisha Islam**, Calvin Eng, and Abram Hindle. Opening the Valve on Pure-Data: Usage Patterns and Programming Practices of a Data-Flow-Based Visual Programming Language. Accepted in 2024 *IEEE/ACM 21st International Conference on Mining Software Repositories (MSR)*. IEEE, 2024.
2. **Anisha Islam**, Nipuni Tharushika Hewage, Abdul Ali Bangash, and Abram Hindle. [Evolution of the Practice of Software Testing in Java Projects](#). In 2023 *IEEE/ACM 20th International Conference on Mining Software Repositories (MSR)*, pp. 367-371. IEEE, 2023.

WORK EXPERIENCE

Graduate Research Assistant Jan 2023 - Aug 2023
University of Alberta *Edmonton, AB, Canada*

- Mined Pure Data and Max/MSP repositories from the World of Code. Calculated the number of nodes, edges, n-grams in each pure data file.
- Created a web interface for demonstrating the routing algorithm of the [personal shopper problem](#). Designed an interactive map frontend for locating the shopper and the customer and showed the routes using React-Leaflet and Leaflet Routing Machine.

Graduate Teaching Assistant Sep 2022 - Current
University of Alberta *Edmonton, AB, Canada*

- **CMPUT 401: Software Process and Product Management:** Managed three cross-functional teams to deliver software products to clients within established timelines. Evaluated sprint submissions to ensure compliance with project documentation and acceptance criteria. Provided guidance and mentorship to team members.
- **CMPUT 402/501: Software Quality:** Conducted lab sessions on various topics, including test-driven development, CI-CD pipelines, code coverage, mocks, stubs, technical debt, and static analysis. Covered testing techniques such as Unit Testing and System Testing using pytest and Mutation Testing using pitest. Assessed and graded assignments.
- **CMPUT 101: Introduction to Computing:** Conducted lab sessions on Python programming. Graded assignments and midterms. Proctored exams.

Software Engineering Intern May 2022 - Aug 2022
NewsCred, Inc. d/b/a Optimizely *Dhaka, Bangladesh*

- Created an engineering dashboard using JIRA, Grafana, Docker, and Python. Used Grafana to visualize the results from the JIRA api and PostgreSQL database. Collaborated with senior developers, participated in peer-reviews. Researched alternate technology stacks and documented the findings.

Intern

eSystems Research and Development (eSRD) Lab

Feb 2021 - Mar 2021

Dhaka, Bangladesh

- Created an e-prescription generation system using Angular, Spring Boot, and MongoDB. Developed APIs for e-prescription generation, profile management for hospitals, patients, and doctors, and other related functions. Enhanced an existing system through debugging and adding functionalities. Recognized as the best performer.

AWARDS AND HONORS

- **Alberta Graduate Excellence Scholarship (AGES):** University of Alberta, 2023 - 2024
- **Graduate Recruitment Scholarship:** University of Alberta, 2022 - 2023
- **Runners up (Team Tessera):** Ada Lovelace Datathon, Dhaka, Bangladesh, 2021
- **University Merit Scholarship:** Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, 2019 - 2021
- **Dean's List Award:** Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, 2018 - 2022
- **Talent Pool Scholarship:** Higher Secondary School Certificate Examination - Government of Bangladesh (Board Merit Position - 2nd), Dhaka, Bangladesh, 2017 - 2022
- **General Scholarship:** Secondary School Certificate Examination - Government of Bangladesh, Dhaka, Bangladesh, 2014 - 2016

NOTABLE ACADEMIC PROJECTS

Analyzing the Traffic Crash Data of Chicago Using Clustering

- Analyzed Chicago traffic crash data for insights to enhance road safety. Applied different clustering algorithms like K-means, K-modes, OPTICS, and DBSCAN to analyze the time, location, and patterns of traffic accidents. Examined the spatial distribution of accidents by their types.

Do Python Projects in Public Version Control Systems Follow Python Style Guidelines?

- Selected a subset of Python projects from the Global Software Supply Chain (GSSC) dataset (version U). Used Pylint to report the number and category of style violations in these projects.

Visualizing the Representation Learned by a DDQN agent in the Mountain Car Environment

- Interpreted why certain learned representations give higher rewards than others. Provided insights into how the different layers of the network work together to learn to get higher rewards. Calculated how different representational properties change over the training period.

Easy Internet Service

- Led a team in developing a web platform connecting NTTN, ISPs, and End Users. Scoped the project, designed the ERD, and contributed to the Class Diagram. Built 90% of backend APIs (Node.js), designed and populated a MongoDB database, and created the frontend (React and CSS).

Lines of Action

- Implemented Human vs Human and Human vs AI modes in Java and JavaFX. AI employed diverse heuristics (piece square table, area, mobility, connectedness) for optimal moves in an alpha-beta pruning-based adversarial search game.

SKILLS

Programming Languages

Python, Java, JavaScript, C, C++, C#, HTML, CSS

Databases and Frameworks

MongoDB, PostgreSQL, Node.js, Spring Boot, React, Flask

Others

L^AT_EX, TensorFlow, PyTorch, Git, Shell Programming, Grafana, JIRA, Docker, Gradle