

ANISHA ISLAM

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EDUCATION

Master of Science in Computing Science, University of Alberta Expected 2024

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

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

Anisha Islam, Nipuni Tharushika Hewage, Abdul Ali Bangash, and Abram Hindle. 2023. [Evolution of the Practice of Software Testing in Java Projects](#), Accepted at *20th International Conference on Mining Software Repositories (MSR'2023)*

WORK EXPERIENCE

Graduate Research Assistant Jan 2023 - Current

University of Alberta

Edmonton, AB, Canada

- 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 using React-Leaflet.
- Developed the APIs needed to connect the React frontend to the Flask backend and calculated the routes using existing algorithms.
- Displayed the routes in the frontend using Leaflet Routing Machine.

Graduate Teaching Assistant

Sep 2022 - Current

University of Alberta

Edmonton, AB, Canada

- Worked as a Teaching Assistant for the course **CMPUT 402/501: Software Quality**. Conducted lab sessions on test-driven development, CI-CD pipeline, code coverage, mocks and stubs, static analysis, technical debt, different testing techniques like Unit Testing, System Testing using pytest, and Mutation Testing using pitest. Graded assignments.
- Worked as a Teaching Assistant for the course **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.
- Conducted research on alternate technology stacks and documented the findings.

Intern

Feb 2021 - Mar 2021

eSystems Research and Development (eSRD) Lab

Dhaka, Bangladesh

- Created an e-prescription generation system using Angular, Spring Boot, and MongoDB.
- Developed the APIs needed to generate and download e-prescription, create, read, update and delete hospital, patient, and doctor profiles, etc. Designed the frontend to show the functions of the APIs.
- Participated in the final evaluation hackathon, debugged a given system, and added additional functionalities to the existing system. Achieved "Excellent" (Performance $\geq 80\%$) in the final evaluation of the internship and was awarded as the best performer.

AWARDS AND HONORS

- **Graduate Recruitment Scholarship (\$5000.00)** University of Alberta, 2022 - 2023
- **Runners up (Team Tessera) (\$126.00)** Ada Lovelace Datathon, Dhaka, Bangladesh, 2021
- **Winner (Team Anomaly)** Covid-19 Idea contest, IEEE BUET Student Branch, Dhaka, Bangladesh, 2020
- **University Merit Scholarship (\$216.00)** Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, 2019 - 2021
- **Dean's List Award (\$76.00)** Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, 2018 - 2022
- **Talent Pool Scholarship (\$370.00)** Higher Secondary School Certificate Examination - Government of Bangladesh (Board Merit Position - 2nd), Dhaka, Bangladesh, 2017 - 2022
- **General Scholarship (\$97.00)** Secondary School Certificate Examination - Government of Bangladesh, Dhaka, Bangladesh, 2014 - 2016

NOTABLE ACADEMIC 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

- A web platform to facilitate internet connection establishment for three entities – NTTN, Internet Service Providers, and End Users.
- Led a three-person team to finalize the project scope, designed the Entity-Relationship Diagram (ERD), and assisted in designing the Class Diagram.
- Developed 90% of the backend APIs using Node.js, designed the database schema, established and populated the MongoDB database, created the frontend using React and CSS.

Lines of Action

- An example of an adversarial search with alpha-beta pruning.
- Implemented two modes of this game: Human vs Human and Human vs AI using Java and JavaFX.
- The AI applied different heuristics such as piece square table, area, mobility, and connectedness of the dices to choose the best move.

SKILLS

Programming Languages	Python, Java, JavaScript, C, C++, C#, HTML, CSS
Databases and Frameworks	MongoDB, PostgreSQL, Node.js, Spring Boot, React, Flask
Others	L ^A T _E X, TensorFlow, PyTorch, Git, Grafana, JIRA, Docker, Gradle
Soft Skills	Time Management, Teamwork, Documentation, Presentation, Leadership

VOLUNTEER EXPERIENCE

Treasurer	Jan 2021 - May 2022
BWCSE (Bangladeshi Women in Computer Science and Engineering)	<i>Dhaka, Bangladesh</i>
<ul style="list-style-type: none">• Managed the budget of the club, collected funds for hosting events, maintained logs of transactions, submitted financial statements to advisory board members.• Co-hosted events like programming contests, project showcasing competitions, and workshops for the female students of BUET.	
Backend Developer	Feb 2020 - Apr 2020
Badhan – BUET Zone	<i>Dhaka, Bangladesh</i>
Badhan is a non-political, social organization for voluntary blood donors in Bangladesh	
<ul style="list-style-type: none">• Developed the APIs needed to search blood donors from BUET based on their last blood donation date, phone number, residential hall, address, blood group, and availability.• Technology stack used: Node.js and MongoDB.	