ANISHA ISLAM

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EDUCATION

Master of Science (Thesis) in Computing Science   *Expected Aug 2024*
University of Alberta   *Edmonton, Alberta, Canada*

Bachelor of Science in Computer Science and Engineering (CSE) (*with Honours*)   *May 2022*
Bangladesh University of Engineering and Technology (BUET)   *Dhaka, Bangladesh*
CGPA: **3.81/4.00**

RESEARCH EXPERIENCE

Undergraduate Thesis   *Mar 2021 – May 2022*
Topic: **Cross-city Deep Transfer Learning Model for Crime Prediction**
Supervisor: **Dr. Tanzima Hashem**, Professor, Department of CSE, BUET

- Introduced a novel region similarity learning technique to learn the similar regions from the source city that show a similar crime pattern as a region in the target city.
- Created a feature embedding for each region in the source and target cities using auxiliary data like taxi flow, road network, and points of interest (e.g., shopping centers, entertainment centers).
- Used the feature embeddings in the region similarity learning module to find the similar regions from the source city for a region in the target city.
- Learned the crime embeddings of the regions in the source city and used the weighted crime embedding of the m most similar regions from the source city and the feature embedding of the region for which crime is to be predicted, and predicted the number of crime events for a particular crime category for that region in a specific timestep.
- Performed extensive experiments using real datasets to show the effectiveness of our model.

AWARDS AND HONORS

- **Graduate Recruitment Scholarship –** University of Alberta   *Sep 2022*
- **Runners up (Team Tessera)** - Ada Lovelace Datathon, 2021   *Jan 2021*
- **Winner (Team Anomaly)**   *2020*
  Covid-19 Idea contest, IEEE BUET Student Branch
- **University Merit Scholarship**, BUET   *2019, 2020*
- **Dean's List Award**, BUET   *2018*
- **Talent Pool Scholarship, Merit Position: 2nd (Dhaka Board-Female)** in Higher Secondary School Certificate Exam (GPA: 5.00/5.00)   *2017*
- **General Scholarship** in Secondary School Certificate Exam (GPA: 5.00/5.00)   *2014*

WORK EXPERIENCE

Graduate Teaching Assistant   *Sep 2022 – Dec 2022*
University of Alberta   *Edmonton, Alberta, Canada*
Course: CMPUT 101 – Introduction to Computing

- Prepared for lectures during the lab sessions and explained lab exercises related to Python programming to students.
- Graded assignment submissions and midterms; uploaded student grades in the official university database and student platforms.

- Worked with the course instructor in addressing problems that the students were facing in the course.

Intern, Software Engineering *May 2022 – Aug 2022*
NewsCred, Inc. d/b/a Optimizely *Dhaka, Bangladesh*
Team: Experimentation Dhaka
- Created an engineering dashboard using JIRA, Grafana, Docker, and Python.
- Implemented the proof-of-concept version of the dashboard and added additional features during the development cycle using Python.
- Used Grafana to visualize the results from the JIRA api and Postgres database.
- Collaborated with senior developers, participated in peer code reviews, and debugged codes.
- Conducted research on alternate technology stacks and documented the findings.
- Used JIRA for agile software development and tracking bugs and issues.

Intern *Feb 2021 – Mar 2021*
eSystems Research and Development (eSRD) Lab
Department of CSE, BUET *Dhaka, Bangladesh*
Under research grant of ICT Division, Government of 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 >= 80%**) in the final evaluation of the internship and was awarded as the best performer.

STANDARDIZED TEST

- **IELTS: 8.0/9.0** *Oct 2021 – Oct 2023*
  Reading: 9.0; Listening: 8.5; Speaking: 8.0; Writing: 7.0

NOTABLE ACADEMIC PROJECTS

Easy Internet Service *Apr 2021 – Jul 2021*
- 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 *Nov 2020*
- 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.

Self-Driven Vacuum Cleaner *Dec 2019 – Jan 2020*
- A self-driven vacuum cleaning robot using ATmega32A as the core.
- Assisted in hardware connection establishment of the robot.

YouTube Database *Jan 2019*
- A database project with similar features like YouTube.
- Designed the frontend of the project using PHP and CSS, connected the PostgreSQL database with the frontend.

TECHNICAL SKILLS

- **Languages**: JavaScript, Python, Java, C, C++, C#, PHP, HTML, CSS
- **Databases**: MongoDB, PostgreSQL
- **Frameworks**: Node.js, Spring Boot, React, Angular
- **IDEs**: Visual Studio Code, Code Blocks, IntelliJ Idea
- **Others**: LaTeX, Scikit Learn, JavaFX, TensorFlow, Git, Google Colab, Jupyter Notebook, Docker, Grafana, JIRA

VOLUNTEER EXPERIENCE

Treasurer *Jan 2021 – May 2022*
BWCSE (Bangladeshi Women in Computer Science and Engineering) *Dhaka, Bangladesh*
- 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 female students of BUET.

Backend Developer *Feb 2020 – Apr 2020*
Badhan – BUET Zone *Dhaka, Bangladesh*
Badhan is a non-political, social organization for voluntary blood donors in Bangladesh.
- 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.

REFERENCES

- Dr. Mario Nascimento
  Professor, Department of Computing Science, University of Alberta
  mario.nascimento@ualberta.ca

- Dr. Tanzima Hashem
  Professor, Department of Computer Science and Engineering, BUET
  tanzimahashem@cse.buet.ac.bd