FARDIN ANAM AUNGON

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RESEARCH INTEREST

My primary research interests lie at the **intersection of software engineering and machine learning**, with a focus on developing innovative, reliable and secured software systems to enhance developer and user experiences. I am especially interested in using machine learning approaches to improve software development tools, optimize software systems, and take on challenging real-world problems across a range of industries.

RESEARCH EXPERIENCE

Earthquake Early Warning System

Deep Learning | Tensorflow

Supervised by : Dr. Mohammed Eunus Ali

January 2024 – Present

Researching based on a novel deep learning approach, Seismic Contrastive Convolutional Neural Network for highly accurate seismic intensity prediction using a small portion of initial seismic waveforms received by a station.

Learning to Index 3D Point-Cloud for Efficient Place Recognition

Computer Vision | Deep Learning

Supervised by : Dr. Mohammed Eunus Ali

May 2023 – January 2024

Studied the state-of-the-art papers for recognizing places using partial 3D point cloud data using deep neural networks. Created partial point clouds from the full Oxford Robot Car Dataset to train models like PointNetVLAD and CASSPR, which achieved high accuracy even with our modified partial dataset. This work showed how deep learning can handle real-world location recognition challenges effectively.

EDUCATION

Bachelor of Science (BSc), Computer Science & Engineering

Bangladesh University of Engineering & Technology

April 2019 – July 2024

CGPA : 3.92/4.0

WORK EXPERIENCE

Junior Software Engineer

DevOps | Java Spring Boot | React JS | PostgreSQL | Azure Cloud | JIRA

Pridesys IT Ltd.

November 2023 – Present

Working as a junior software engineer on a project with a separate team to develop a cloud based enterprise resource planning (ERP) system. I, along with the team, research on the existing ERP softwares to find out the best user experience and then design, develop and deploy the product.

Research Assistant

React JS | Google Maps Api

Institute of Water And Flood Management, BUET

2022 – Present

Working as a research assistant on a government project funded by RISE-BUET to develop a web-based early warning system for river erosion. The deployed project can be viewed here.

Project Intern

Mobile Application Development | Android | Java | ASP.NET

Pubali Bank Ltd.

May 2023 – June 2023

A project under the supervision of experienced mentors which involved developing a module of Pubali bank's banking app.

HONORS & AWARDS

Dean's Award
Recipient of dean's award for excellent undergraduate result: 2019-2022

University Stipend
Recipient of university stipend in every semester for excellent undergraduate result: 2019-2024

LEADERSHIP EXPERIENCE

Organizer, BUET CSE Fest 2023
July 2023

A part of the organizing team of BUET CSE Fest 2023 which had several inter-university competitions such as hackathon, programming contest, deep learning competition, capture the flag, gamejam and several events such as cultural program, dance mob, treasure hunts, indoor and outdoor games. I was also one of the lead organizers and judge of gamejam, a game development competition which had about a hundred participants.

NOTABLE ACADEMIC PROJECTS

SyncInc
Django | Django REST | ReactJs | PostgreSQL | MUI

A web-based project and task delegation and management software designed for organizations. The stack includes PostgreSQL as the database, Django for the backend, ReactJS with Material UI for the frontend, Django REST framework for API development, Firebase's firestore for file storage, and Django Channels for real-time notifications.

RentaStay
Django | Vanilla JavaScript | Oracle Database

A web app to rent and manage houses and apartments inspired by Airbnb. The stack includes Oracle database, Django for both back-end and server side rendering of the front-end, Vanilla JavaScript for DOM manipulation, and Bootstrap for styling

Ray Tracing and Illumination using OpenGL from scratch
CPP | OpenGL

Implementation of image genereation pipeline using ray tracing and illumination techniques for generating realistic images of some geometric shapes (sphere, pyramid, cube) and a 2D plane using the openGL.

Laser Security System With Arduino
Arduino | Microprocessor

A simple project to control a laser security system with microcontrollers, i.e. Arduino and ATMega32.

Compiler
Bison | Flex

A compiler built from scratch including steps of creating a symbol table, building a lexical analyzer, semantic analyzer and on the fly intermediate code generation.

Implementation of an Operating System
xv6

Implementing various steps of an operating system including system calls, scheduler and memory management on top of xv6 OS (RISC-V architecture).

EXPERTISE AND SKILLS

- **Programming Languages:** C/C++, Java, Python, JavaScript, TypeScript, x86 Assembly, SQL, CSS, Bash
- **Tools & Frameworks:** Redux, Django, Spring Boot, jQuery, Git, Oracle DBMS, PostgreSQL, Bison, Flex
- **Libraries:** React JS, OpenGL, PyTorch, pygame, Sklearn
- **Software:** Unity, Git, Wireshark

REFERENCES

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