# MASHIAT MUSTAQ

mashiatmustaq98@gmail.com https://mashiatportfolio.netlify.app/
www.linkedin.com/in/mashiat-mustaq-58691415b https://github.com/Mashiatmm

## EDUCATION

### Bachelor of Science in Computer Science & Engineering

**Bangladesh University of Engineering & Technology**

March 2018 – May 2023

**Rank : 4th; CGPA : 3.96**

**Notable Courses** : Computer Graphics | Machine Learning | Simulation & Modelling | Software Engineering | Computer Security | Computer Networking | Artificial Intelligence | Operating System | Compiler | Bioinformatics | Comp. Architecture | Microprocessor, Microcontroller & Embedded Systems

## RESEARCH EXPERIENCE

### Research Intern, Interactions Lab, University of Calgary

**Working in a project in Augmented Reality under Dr. Ryo Suzuki**

June 2023-Present

### Identification Of Dengue Breeding Places From Aerial Images

**Ongoing thesis, under Dr. Anindya Iqbal and Dr. Manzur Murshed.**

June 2023-Present

### Machine Learning for Early Detection and Progression Prediction of Alzheimer's Disease: A Multi Polygenic Risk Score Approach

**Undergrad thesis, under Dr. Md. Shamsuzzoha Bayzid, in collaboration with ICAHN School of Medicine.**

May 2022-Present

### Development of Flood Forecasting System for Someshwari-Kangsa Sub-watershed of Bangladesh-India Using Different Machine Learning Techniques

**Poster presentation, EGU General Assembly 2021**

[Link]

## WORK EXPERIENCE

### **Adjunct Lecturer**, Bangladesh University of Engineering & Technology

June 2023 – Present

1. (January 2023) Course Instructor : Computer Networking Sessional - Lectures on NS-3
2. (January 2023) Course Instructor : Database Sessional
3. (January 2023) Course Instructor : Object Oriented Programming Sessional

### **Remote Software Engineer**, Sedbox, Canada

June 2021 – December 2021

Extracted data using google APIs, automated website interaction extracting ROIs using OpenCV while contributing to an R&D project.

## RELEVANT PROJECTS

### Generating realistic images using Ray Tracing and Illumination techniques CPP OpenGL

Implementation of ray tracing and illumination techniques using the Phong Lighting model (computing ambient, specular, diffusion and recursive reflection component) for generating realistic images of some geometric shapes (sphere, triangle, general quadric surface) and a 2d plane using the library of openGL.

### Computer Graphics sessional CPP OpenGL

Implementation of a raster based graphics pipeline and generation of objects with different shapes.

### Kibo Robot Programming Challenge java openCV

Solved a robot navigation problem by avoiding obstacles and reading QR tags in fixed locations.

### DealFinder Web Scraping Python CSS Javascript

Dealfinder is a platform where you can find all the tech deals and latest offers. It scrapes existing deals from websites, offers the consumers to choose their criterias for finding a product, then finds them the best deal on the internet.

### IntDesk Django Docker Rest API Postgresql Postman Reactjs

IntDesk is an all-in-one tech interview preperation platform. Here the users can solve problems that are asked in interviews of different software companies, can take assesments, and earn different badges to showcase their skills, and discuss their interview problems in a public forum.

### Implementation of ASRAN Algorithm in NS3 Computer Networking NS3

Implementation of ASRAN algorithm to identify between transient link instability & congestion in a mobile ad hoc network.

### Compiler Bison Flex

A compiler built from scratch including steps of creating a symbol table, building a lexical analyzer, semantic analyzer and finally generating intermediate code.

### Implementation of an Operating System xv6

Implementing various steps of an operating system such as memory management, scheduling etc.

## TECHNICAL SKILLS

- **Programming Languages:** C/C++, C#, Python, Javascript, x86 Assembly, MySQL, Bootstrap, Bison, Flex, Bash
- **Tools & Frameworks:** NS-3, PyTorch, Keras, Django REST, ReactJS, Git, Oracle DBMS, LaTeX
- **Libraries:** OpenGL, OpenCV, pygame, Sklearn, Pandas, Matplotlib, Seaborn, Matterjs
- **Software:** Unity, Git, Wireshark, Navicat, MS Office, Adobe Photoshop, Adobe Illustrator.

## COMPETITIONS & ACHIEVEMENTS

### 1st Runners Up - Microsoft Azure Virtual Hackathon 2022

***Built a dengue forecast system that predicts the number of dengue cases in any given region.***

### Champion - HerWill Datathon 2022

***Forecasted taxi demand using machine learning & data analysis.***

### 2nd Runners Up - UNDP Women's Hackathon 2021

***Built a Dengue Control and Monitor System.***

### Participations

- Robi Datathon 2.0 - Top 25 teams - A datathon on drawing various insights from data.
- Ada Lovelace Datathon - Top 5 teams - A datathon on a machine learning problem.
- Dhaka AI 2020 - Top 20 teams - Solved an object detection problem.

## HONORS & AWARDS

**Honda Y-E-S Award 2022**
Given to four students in Bangladesh with prize money of $3000 based on merit and extra-curricular skills.

**Grace Hopper Celebration Scholar '21**
Given only to a few for attending a worldwide conference for women from stem background.

**Dean's List, University Merit List**
Recipient of both Scholarship for the year 2019, 2020, 2021, 2022 for academic excellence.

## TEST SCORES

### GRE

**Quant: 169/170, Verbal : 150/170, AWA : 4/6**

February 2023

### TOEFL

**Reading: 30/30, Listening: 30/30, Speaking: 28/30, Writing: 28/30**

June 2023

## VOLUNTEERING & LEADERSHIP EXPERIENCES

### Co-Lead, Agami Library Project

September 2019 – Present

Established a library system in six schools of Dhaka for around 2000 underprivileged students by managing a team of 30 volunteers. Prepared annual budgets, proposals for executing the project.

### Chair of the Publication Committee, IEEE Computer Society BUET Branch

March 2022 – March 2023

Helped in arranging programs inside the CSE Department.

### Vice President - BUET Entrepreneurship Development Club

March 2022 – March 2023

Helped in arranging programs in the campus premises.

### Treasurer - BUET Dance Club

March 2022 – March 2023

Took care of the budgets, expenses of the club.

### Technical Team Member - Gyanjam

2018 - 2019

Helped arranging numerous workshops in schools, wrote blogs on technical instruments.

## REFERENCES

**Dr. Md. Shamsuzzoha Bayzid, Associate Professor**
CSE Department, BUET
shams_bayzid@cse.buet.ac.bd

**Dr. Anindya Iqbal, Professor**
CSE Department, BUET
anindya@cse.buet.ac.bd