

MASHIAT MUSTAQ

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RESEARCH INTERESTS

Human Computer Interaction Computer Graphics Visualization Animation

EDUCATION

Bachelor of Science in Computer Science & Engineering

Bangladesh University of Engineering & Technology

March 2018 – May 2023

Rank : 4/120; CGPA : 3.96/4.0

Notable Courses : Computer Graphics Linear Algebra Machine Learning Simulation & Modelling Compiler

Software Engineering Computer Security Computer Networking Artificial Intelligence Operating System

Bioinformatics Computer Architecture Microprocessor, Microcontroller & Embedded Systems

RESEARCH EXPERIENCE

Augmented Physics, Interactions Lab, University of Calgary HCI AR Graphics Animation

Supervised by : Dr. Ryo Suzuki, Dr. Rubaiat Habib Kazi

August 2023-Present

In preparation to submit to UIST 2024

Identification Of Dengue Breeding Places From Aerial Images Image Processing 3D Object Detection

Supervised by : Dr. Anindya Iqbal, Dr. Manzur Murshed.

June 2023-Present

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

Authors : Mashiat Mustaq, Naeem Ahmed, Sazan Mahbub, Clara Li, Yuichiro Miyaoka, Julia TCW, Shea J Andrews, Md. Shamsuzzoha Bayzid

May 2022- November 2023

In preparation to submit to the journal npj Digital Medicine [medRxiv]

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

Authors : Hamidul Haque, Mushtari Sadia, Mashiat Mustaq

Poster presentation, EGU General Assembly 2021 [Link]

WORK EXPERIENCE

Lecturer, CSE Dept., Bangladesh University of Engineering & Technology

October 2023 –Present

Theory Course Instructor : Computer Programming (C/OOP)

Sessional Instructor : Computer Programming (C/OOP), Embedded Systems & Interfacing, Software Programming

Adjunct Lecturer, CSE Dept., Bangladesh University of Engineering & Technology

June 2023 – October 2023

Sessional Instructor : Database, Object Oriented Programming & Computer Networking

Highlights : Lectures for NS-3 beginners

Remote Software Engineer, Sedbox, Canada

Computer Vision

Google API

June 2021 – December 2021

Automated website interaction extracting ROIs using OpenCV in an R&D project and extracted data using google APIs for feeding into a prediction model.

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 preparation 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.

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

March 2023

TOEFL

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

June 2023

LEADERSHIP EXPERIENCES

Lead, Agami Library Project

September 2019 – Present

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

[Website](#)

Chair of the Publication Committee - IEEE Computer Society BUET Branch

Vice President - BUET Entrepreneurship Development Club

Treasurer - BUET Dance Club

March 2022 – March 2023

Helped in arranging programs inside & outside the CSE Department, made budgets, tracked expenses of the club.

Technical Team Member - Gyanjam

2018 - 2019

Took the initiative of arranging numerous workshops in schools, wrote articles on technical instruments.

REFERENCES

Dr. Md. Shamsuzzoha Bayzid, Associate Professor

CSE Department, BUET

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Dr. Anindya Iqbal, Professor

CSE Department, BUET

anindya@cse.buet.ac.bd