

# MASHIAT MUSTAQ

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## EDUCATION

Bachelor of Science in Computer Science & Engineering

Bangladesh University of Engineering & Technology

March 2018 – May 2023

Rank : 4/120; CGPA : 3.96

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

## RESEARCH EXPERIENCE

Augmented Physics, Interactions Lab, University of Calgary

Augmented Reality   Graphics   Animation

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

June 2023-September 2023

Submitted in CHI 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

Supervised by : Dr. Md. Shamsuzzoha Bayzid

Collaborators :, Dr. Shea J Andrews, Dr. Clara Li, Dr. Yuichiro Miyaoka

May 2022-Present

Planning to submit in the Journal Alzheimer's Association

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

Machine Learning

Poster presentation, EGU General Assembly 2021

[\[Link\]](#)

## WORK EXPERIENCE

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

October 2023 –Present

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

June 2023 – October 2023

(January 2023) Course Instructor : Database, Object Oriented Programming & Computer Networking Sessional

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

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

CPPOpenGL

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.

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### Computer Graphics sessional

CPPOpenGL

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

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### Kibo Robot Programming Challenge

javaopenCV

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

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### DealFinder

Web ScrapingPythonCSSJavascript

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.

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### IntDesk

DjangoDockerRest APIPostgresqlPostmanReactjs

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.

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### Implementation of ASRAN Algorithm in NS3

Computer NetworkingNS3

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

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### Compiler

BisonFlex

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

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### Implementation of an Operating System

xv6

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

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## 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.

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## 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

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### Honda Y-E-S Award 2022

Given to four students in Bangladesh with prize money of \$3000 based on merit and extra-curricular skills.

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### Grace Hopper Celebration Scholar '21

Given only to a few for attending a worldwide conference for women from stem background.

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### Dean's List, University Merit List

Recipient of both Scholarship for the year 2019, 2020, 2021, 2022 for academic excellence.

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## TEST SCORES

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### 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

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### 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 Link](#)

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### 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..

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### Technical Team Member - Gyanjam

📅 2018 - 2019

Took the initiative numerous workshops in schools, wrote blogs on technical instruments.

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## REFERENCES

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### 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