

# AL-MUBIN KHAN NABIL

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## EDUCATION

**Bachelor of Science, Computer Science and Engineering**

March 2019 - June 2025

Shahjalal University of Science and Technology, Sylhet, Bangladesh

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## PROJECTS

### YOLOv8 with depth [\[link\]](#)

- Implemented **YOLOv8 from scratch** and modified the architecture to add **depth** estimation functionality
- Collected and Prepared **dataset** for car bounding box detection in parking lots with depth value

### OddEngine [\[link\]](#)

- Built a game engine from scratch using java and **OpenGL** with **GPU optimized 2D physics engine** [\[link\]](#)

### Raycast via rasterization [\[link\]](#)

- Using gpu **compute shaders** to calculate LiDAR scan data in simulations instead of performance heavy raycasts.

### Find optimal investment strategy using pytorch [\[link\]](#)

- trained a neural network as a **differential solver** to find optimal investment strategy for electricity sources in Bangladesh for minimal load shedding taking into account vulnerability to natural disasters and CO2 pollution.

### Evaluate adversarial robustness of NR-IQA models [\[link\]](#)

- Adversarially attack NR-IQA models to expose vulnerabilities and explain them via **xAI techniques**
- Design a novel **benchmarking system** for evaluating robustness against adversarial attacks

### Terraform based automated deployment to GCP serverless

- Used Terraform to automate building docker images (**GCP Cloud Build**) and deploying it to GCP **Cloud run**, Integrated Sentry for production monitoring [\[link\]](#)
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## OPEN SOURCE CONTRIBUTIONS

### Matplotlib

Standard plotting library for data science applications

- Fixed dependency conflicts and updated deprecated code in automatic documentation building pipeline [\[link\]](#)
- Proof of concept PR for sketch based search engine for their documentation [\[link\]](#)

### GoogleChromeLabs/Squoosh

Image compression and comparison utility for the web

- Made compression parameter configurations exportable for sharing with other users [\[link\]](#)
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## AWARDS

### Nasa Space App Challenge 2022

Champion

### Google CTF, 2021

387th Globally

### DU IIT presents ITVerse Devops hackathon 2023

2nd runner up

### IUT Gamejam, 2024

Runner up

**Kibo robot programming challenge, JAXA, 2023**  
4th regionally

**Leading University Hackathon, 2022 & 2023**  
Champion

**Mujib 100 National IDEA Contest, 2021**  
Champion

**HackTheBox CyberApocalypse CTF, 2023**  
179th Globally

**Bdapps national hackathon, regional round**  
top 5

**Mechnovation Line Follower Robot Competition, 2023**  
Champion

**Autonomous vehicle detection challenge, SUST**  
4th

**Project showcasing, BUET robo carnival, 2018**  
Runner up

**Robotics contest for colleges, 2018, UIU**  
Champion

**Annual project hunt, Robosust, 2022**  
Runner up

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## WORK EXPERIENCE

**Research and Development Engineer** Jul 2025 - Present  
Krait, Dhaka, Bangladesh

- Working on building a **static analyzer** for python and java
- Fast Key value storage (lmbd) for **caching** large data
- Process **realtime logs**, store them in **QuestDB**, dashboard for monitoring system and usage

**Fullstack Web Developer** Dec 2024 - Mar 2025  
Kognito, Dhaka, Bangladesh

- Built a platform to generate and give exams from various question banks using **NextJS, typescript, XState**
- Used **OpenAI api** to provide ai feedback on user's performance on exam

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## FAMILIAR TOOLS:

**ML tools:** Pytorch, Matplotlib, Numpy, Embedding models, Meta learning, Object Detection, OpenCV;  
**Programming Languages:** Python, C, C++, Java, JavaScript;  
**DevOps:** Docker, Terraform, gcp, aws;

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## HOBBIES

Cycling | Prying open electronics | breaking my OS | Guitars | Bikes | Travelling | Basketball | Photography