

# AL-MUBIN KHAN NABIL

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## EDUCATION

**Bachelor of Science, Computer Science and Engineering**  
Shahjalal University of Science and Technology, Sylhet, Bangladesh

March 2019 - June 2025

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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

<b>Kibo robot programming challenge, JAXA, 2023</b> 4th regionally	<b>Mechnovation Line Follower Robot Competition, 2023</b> Champion
<b>Leading University Hackathon, 2022 &amp; 2023</b> Champion	<b>Autonomous vehicle detection challenge, SUST</b> 4th
<b>Mujib 100 National IDEA Contest, 2021</b> Champion	<b>Project showcasing, BUET robo carnival, 2018</b> Runner up
<b>HackTheBox CyberApocalypse CTF, 2023</b> 179th Globally	<b>Robotics contest for colleges, 2018, UIU</b> Champion
<b>Bdapps national hackathon, regional round</b> top 5	<b>Annual project hunt, Robosust, 2022</b> Runner up

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## WORK EXPERIENCE

<b>Research and Development Engineer</b> Krait, Dhaka, Bangladesh	Jul 2025 - Present
<ul style="list-style-type: none"> <li>Working on building a <b>static analyzer</b> for python and java</li> <li>Fast Key value storage (Imdb) for <b>caching</b> large data</li> <li>Process <b>realtime logs</b>, store them in <b>QuestDB</b>, dashboard for monitoring system and usage</li> </ul>	

  

<b>Fullstack Web Developer</b> Kognito, Dhaka, Bangladesh	Dec 2024 - Mar 2025
<ul style="list-style-type: none"> <li>Built a platform to generate and give exams from various question banks using <b>NextJS, typescript, XState</b></li> <li>Used <b>OpenAI api</b> to provide ai feedback on user's performance on exam</li> </ul>	

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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