

NAFIS UL ISLAM

nafisulislam2k2@gmail.com | <https://github.com/DethCubeHax> | www.nafisui.com

EDUCATION

The University of Hong Kong

September 2021 – June 2025 (Expected)

Bachelor of Engineering in Computer Science

- Courses Taken: Cybersecurity, Machine Learning, Database, Networking, Algorithms Design, Web Development
- Minor in Finance, Focus in AI and Robotics

PROFESSIONAL EXPERIENCES

Standard Chartered Bank

July 2024 – August 2024

Summer Intern (SME Banking)

- SME Express digital platform development and testing digital signature, digital onboarding, Customer ID & Verification.
- Drafted detailed requirements and automated UAT for process digitalization with HKMA's Commercial Data Interchange.
- Digital payment partnership program and e-commerce financing program development, automated UAT testing and launch.

The University of Hong Kong

January 2024 – May 2024

Student Research Assistant (Robotics)

- Developed a software stack using LLMs to convert generic user textual input to robot arm motor commands.
- Directed the development of a ROS MoveIt simulation to streamline development and simplify inverse kinematics.
- Led the investigation of text to image object classification models as well as LLMs to determine a suitable model.

Kodify Limited

June 2023 – August 2023

Software Engineer

- Developed a web framework displaying LiDAR PointClouds and camera feeds with 97.2% accurate landslide detection.
- Created a LiDAR simulator with variable PointCloud density in Blender, allowing data gathering from simulated scenes.
- Parallelized the PointCloud processing algorithm using Linux pthreads to improve throughput to the frontend by 450%..

The University of Hong Kong

June 2022 – August 2022

Student Research Assistant

- Developed an interactive VR metaverse using C# in Unity and Blender, hosting 4,000 users during the Innoshow.
- Created a bash script to automatically compile the APKs and push the update directly to the headset upon connection.
- Designed an intuitive user interface within the VR platform, making navigation and interaction user-friendly.

PROJECTS AND EXTRACURRICULARS

FinanceE – Automatic Inventory Management and Reimbursement System, BREED HKU

- Implemented OpenCV and TensorFlow for automatic receipt and invoice scanning, streamlining reimbursement.
- Developed spaCy and BERT NLP module to extract information from financial documents automatically.
- Integrated machine learning algorithms for automated approval and reimbursement process optimization.
- Engineered secure React/Node.js web app for seamless reimbursement request submission and track.

Robotic Fish, BREED HKU (GitHub)

- Engineered a turning algorithm in C++ on ESP32 using the tail fin, breaking the world record for the fastest robotic fish.
- Constructed the linear transformations in ROS and python for the servo controlled fins, improving pitch efficiency by 80%.
- Engineered a communications protocol which decreased communication latency by 413% and increased range by 300%.
- Developed an energy-efficient trajectory planning system to improve the battery life by 40% on yaw stroke.

Personal Portfolio (GitHub, Deployment)

- Developed a portfolio site using Vue.JS and Node.JS to host personal projects, work experiences, publications and blogs.
- Optimized the JavaScript to increase website rank on search engines, appearing #4 on Google Search.
- Leveraged Vue.js for fast, server-side rendered pages, reducing load times and enhancing performance.
- Utilized advanced CSS and Vue.js transitions for custom animations, creating a unique, framework-free design.
- Deployed on Vercel for automatic updates with git integration and global CDN support, optimizing delivery speed by 31%.

NelsonTalks (GitHub)

- Created a blog site in Flask and SQL for hosting and discussing personal projects, allowing users to save pages and comment.
- Deployed on Amazon AWS for 3 months on a free Ubuntu Linux EC2 instance, garnering over 6,000 views cumulatively.
- Implemented caching strategies to optimize resource usage, significantly improving site performance and user experience.
- Configured AWS CloudWatch for the EC2 instance to monitor application health, enabling proactive issue resolution.

ParaLlama (GitHub)

- Engineered an 800% faster Llama-2 text generator in C by using Linux pthreads to parallelize matrix-vector computations.

JCSHELL (GitHub)

- Created a 55% faster Linux shell in C with piping and runtime analysis leveraging Linux kernel features, i.e. fork, exec, etc.

PUBLICATIONS

Design and Implementation of a Cost-Efficient Underwater Communication System (Link)

- A research on an affordable, Arduino Nano and APC220 434 MHz transceiver-based underwater communications system.
- Published on the ISAM 2023 conference hosted at Carnegie Mellon University in October 2023.

SKILLS

Languages: Python, Java, C++, C, C#, JavaScript, TypeScript, SQL, R, Bash, ZSH

Frameworks: React, Next.js, React-Native, MongoDB, MYSQL, Node.js, Express.js, PixHawk, Git