Shahrier Hossain

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Software Engineer with 2 years of professional experience in full-stack development, cloud architecture, and IoT. Passionate about UAVs, robotics, artificial intelligence, machine learning, and cybersecurity.

Education

American International University - Bangladesh, BSc. in Computer Science and Engineering
September 2019 – September 2023

- GPA: 3.35/4.0

Academic Experience

Teaching Assistant, American International University - Bangladesh, Dhaka, BD
September 2023 – December 2023

- Designed and delivered workshops on system architecture and low-level programming (C/C++), guiding 40+ students in optimizing resource allocation, memory management, and embedded systems design.
- Mentored students in debugging and optimizing code for real-time robotics applications, emphasizing efficiency in constrained environments.
- Help the professor with grading, assignments, and students' projects.

Academic Training

Ardiuno, Multi Tech, Organized by Bangladesh Hi-Tech Park Authority
November 2020 – December 2020

- Completed a 96-hour Arduino and IoT fundamentals training course organized by the Bangladesh Government.
- Selected as one of 40 students from across Bangladesh.
- Led a project to design and develop a "COVID-19 Sanitizing Robot" as the project leader.

Thesis

Automated Eye Disease Detection Using Machine Learning Algorithms

- Applied a Convolutional Neural Network (CNN) architecture using the VGG-19 model and K-Nearest Neighbors (KNN) for image classification to accurately identify eye diseases such as glaucoma, and diabetic retinopathy.

Ongoing Research Project

Continuous Authentication in UAV Ground Control Stations Using Multi-modal Behavioral Biometrics

- I am working on a research project focused on UAV ground control station security using continuous authentication. The system uses multi-modal behavioral biometrics such as keystroke dynamics, mouse, and joystick patterns. We apply deep learning models like LSTM autoencoders and GANs for anomaly detection and data alignment. The approach is designed to resist adversarial attacks and is optimized for real-time edge deployment. Simulations are conducted in Microsoft AirSim for realistic evaluation.

Experience

Software and AI/ML engineer, JB Connect Ltd. – Dhaka, BD
March 2024 – Present

- Implemented multiple software architectures for mid- and large-scale applications.
- Developed an internal enterprise-standard monorepo microservice architecture, adopted across multiple projects within the company.
- Engineered a scalable full-stack serverless architecture using AWS Amplify, AWS Lambda, AppSync (GraphQL), TanStack Query, and ReactJS with TypeScript. Integrated a custom-managed PostgreSQL database for relational

data handling, with secure authentication via Amazon Cognito. Designed CI/CD pipelines and modular frontend components to enable real-time data synchronization, efficient state management, and seamless deployment.

- Gained hands-on experience in AI engineering through the development of "SevenSix", a service-based AI chat application built with FastAPI and deployed on AWS ECS. Integrated LLaMA via LangChain to build dynamic, context-aware conversational flows for handling client queries.

Junior Software Engineer, Munchies – Dhaka, BD   January 2024 – March 2024

- Worked on four In-House products: Restaurant Portal, Delivery Service Portal, Admin Portal, and Consumer Application.
- Developed the first-ever voucher system feature and connected multiple applications.
- Collaborated on full-stack features using tRPC for seamless type-safe API communication between the backend and frontend.

Skills

Robotics Systems: Arduino, IoT Fundamentals (Cisco Certified), ROS (Robot Operating System).

Human-Robot Interaction: UI/UX Design for Robotics, Gesture Recognition, Voice Command Systems (NLP tools).

Languages: Python, C/C++, C Sharp, Java, JavaScript.

AI/ML: Convolutional Neural Networks (CNN), K-Nearest Neighbors (KNN), PyTorch, NumPy, Pandas.

DevOps and Infrastructure:AWS, Docker, CI/CD Pipelines.