

# Nazmus Shakib Sayom

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## OBJECTIVE

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Experienced software engineer specialized in embedded systems and IoT, seeking a challenging role to utilize my technical skills and problem-solving abilities in the development of cutting-edge embedded solutions.

## EDUCATION

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### Bachelor of Computer Science and Engineering

2017 - 2020

*American International University-Bangladesh*

Summa Cum Laude

CGPA: 3.96

## SKILLS

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### Programming Languages

C/C++, Python, JavaScript, TypeScript, Bash

### Frameworks

Yocto Project, Node.js, NestJS, FastAPI, oclif

### Tools

Git, CMake, OpenCV, Docker, SQL, MongoDB, InfluxDB

### Communication Protocols

UART, I2C, SPI, nRF24 RF, LoRaWAN, BLE  
RESTful API, MQTT, Redis, WebSocket, GraphQL

### Boards, SoCs and SoMs

Raspberry Pi 3\4\CM4, Firefly Core-3566JD4,  
Toradex Verdin iMX8M Mini, ESP32, STM32, Arduino

## EXPERIENCE

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### Linux Developer

Jan 2023 - Present

meldCX

*Dhaka, Bangladesh*

- Designed and built a Linux distribution for ARM-based systems with OTA update feature enhancing system maintainability.
- Developed a multi-threaded and memory-safe Linux service that exposes embedded device driver functions over the network, simplifying development on consumer-facing applications.
- Worked closely with the QA team to enhance system stability, supporting successful product demonstrations that led to new B2B partnerships.
- Collaborate with multiple device vendors on device driver development.
- Preparing hardware requirement for the developed systems and benchmarking multiple release candidates

### Senior Software Engineer

July 2022 - Dec 2022

HelloTask Platform Ltd.

*Dhaka, Bangladesh*

- Led a team to develop a job platform for blue-collar workers, improving user accessibility.
- Created an IVR-based system to help users without internet access utilize job portals.
- Integrating third-party payment and on-boarding platforms ensuring smooth inter-operability.
- Used data-driven approaches to improve system functionality and user engagement.

### Lecturer

Jan 2022 - June 2022

Department of ETE/ICE, Daffodil International University

*Dhaka, Bangladesh*

- Taught courses in Operating Systems, Embedded Systems, and Computer Fundamentals.
- Contributed to two conference papers in the field of Deep Learning.
- Secured funding for research on technology integration in classrooms to bridge the education gap.

- Built prototype of a self-checkout store network to enhance customer experience and security.
- Built a centralized advertisement delivery platform using IoT and Computer Vision.
- Created a voice-call broadcasting system for company marketing and survey that increased sales by 30%.

## PERSONAL PROJECTS

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**Voice Remote** Designed and prototyped a voice command-enabled remote controller for Android Open-Source Project (AOSP) TV using Arduino and nRF24 technology. Integrated IBM Watson speech-to-text API to enable voice recognition and control. Project available on GitHub.

**Depen** Developed a handheld device providing on-the-go OCR and word definitions as a Tangible User Interface project at university. Utilized Raspberry Pi Zero, Python, OpenCV, and WordNet. Project code and demo available on GitHub and YouTube.

**TALK-E** Crafted 'TALK-E', a long-range unlicensed frequency digital walkie-talkie, using nRF24L01+, Arduino, and audio pre-amps and drivers. Codes available on GitHub.

**Dancing Bees** Developed a data visualization application in Python and OpenCV, to plot and animate honey bee flight paths from annotated JSON frame data. Demonstrated output via video. Project available on GitHub.

**Theia** Developed 'Theia', an enterprise-grade solution for MCQ bubble sheet evaluation, leveraging OpenCV and implemented in C++ and VB.NET. Streamlined traditional image processing techniques for accuracy. Project details on GitHub.

## RESEARCH PROJECTS

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**Disaster Victim Tracking and Rescue Support System with Failsafe Multilayer Communication Networks:** Undergraduate thesis focusing on designing and implementing a multilayer communication network for efficient disaster victim tracking and rescue support. Utilized technologies such as ESP32, Node.js, LoRaWAN, BLE, and GSM to ensure reliable and failsafe communication during emergencies. Available on ResearchGate (May 2020).

## PUBLICATIONS

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1. Alfaz, N., Hasnat, A., Khan, A. M. R. N., **Sayom, N. S.**, & Bhowmik, A. (2022). Bridge Crack Detection Using Dense Convolutional Network (DenseNet). In *Proceedings of the 2nd International Conference on Computing Advancements* (pp. 509–515). Association for Computing Machinery. DOI: 10.1145/3542954.3543027
2. Alfaz, N., Hasnat, A., Khan, A. M. R. N., & **Sayom, N. S.** (2022). A Deep Convolutional Neural Network Based Approach to Classify and Detect Crack in Concrete Surface Using Xception. In *Proceedings of International Conference on Fourth Industrial Revolution and Beyond 2021* (pp. 29–43). Springer Nature Singapore. ISBN: 978-981-19-2445-3

## ENGLISH PROFICIENCY

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- **IELTS Score:** 8.0

## HONORS & AWARDS

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- Awarded Summa Cum Laude for outstanding academic excellence during undergraduate studies.
- Recognized on the Dean's List for exceptional academic performance in Spring and Fall 2019.
- Emerged as Champion in the App Development category at the AIUB CS Fest 2017.