

Sayed Tanimun Hasan

(Embedded Systems Engineer)

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Experienced Embedded Systems Design Engineer with over 2 years of hands-on experience in electrical and electronic engineering, specializing in the development of IoT devices. Holds an MSc in Electronic and Electrical Engineering. Expert in creating bespoke systems using Embedded C/C++, with extensive knowledge of microprocessors and microcontrollers, and their adaptation for specific device requirements. Proficient in both software and hardware testing, with a proven track record of delivering high-quality solutions. Skilled in utilizing AWS, Thingsboard, and API creation. Demonstrated ability to test web applications and collaborate effectively with R&D, UI, and UX teams to ensure seamless product development and integration. Adept at navigating complex technical challenges and delivering innovative solutions that meet client needs.

Education

2023 – 2024

MSc in Electronic and Electrical Engineering, University of Portsmouth, England, UK, Grade: Merit

MSc Project: Firmware-Over-The Air (FOTA) Upgrade for autonomous driving

2017–2021

BSc in Electrical and Electronic Engineering,

International Islamic University Chittagong, Chittagong, CGPA 3.230 out of 4.00

Thesis: Computer Vision Based Industrial and Forest Fire Detection using Support Vector Machine (SVM)

Experience

Jun 2024 – Pres **Research Associate (KTP)** *University of Portsmouth, England, United Kingdom*

PROJECT: SEACHANGE (UKRI Funded, £19.8 million funding)

Responsibility:

- Develop & implement firmware, microcontroller programming, and peripheral interfacing.
- Design and test analog and digital circuits, creates schematics and develop PCB layouts.
- Build and debug prototypes, conduct though testing, and production transitions.
- Develop innovative solutions, and stay updated with industry advancements
- Manage project timelines, collaborate with cross-functional teams, and prepare technical reports
- Work with academic and industrial partners, maintaining effective communication with stakeholders.

Feb – May 2024 **Teaching Assistant (TA)**, *University of Portsmouth, England, United Kingdom*

Teaching Responsibilities:

Course Conduct: Real-Time Embedded System (M21410)

- Conduct lab sessions and lectures on real-time embedded systems and FreeRTOS.
- Provide one-on-one tutoring and technical support to students.
- Mentor students on embedded systems development best practices.
- Guide students through course projects, ensuring practical application of theoretical knowledge.

Oct 2021- Dec 2022 **Associate Engineer (System Design) in R&D Dept.**, *THiNK Limited, Dhaka, Bangladesh*

Responsibilities:

Project Manager: Electronic Beacon System (EBS) [Client: Bangladesh Army]

- Firmware design and development of micro-controller-based products
- Collaborate and communicate with coworkers and development partners regarding firmware design status, project progress, and issue resolution
- Standard RTOS such as FreeRTOS, Zephyr
- Analyze, design, program, debug, and modify firmware
- Test and validate embedded systems device.

Publications (Journal/Conference Proceedings)

[1] “Computer Vision Based Industrial & Forest Fire Detection using Support

Vector Machine (SVM)”, *ICISSET-2022(International Conference on Innovations in Science, Engineering & Technology)*. DOI: 10.1109/ICISSET54810.2022.9775775

[2] “Faking Smart Industry: Exploring Cyber-threat Landscape Deploying Cloud-based Honeypot” *Wireless Networks Journal* DOI:10.1007/s11276-022-03057-y

[3] “IoT Based Solar Power Monitoring and Data Logger System.” 8th *IEEE International WIE Conference on Electrical and Computer Engineering 2022, Naya Raipur, India*

DOI: 10.1109/WIECON-ECE57977.2022.10150511

Technical Skills

Advanced: Microcontroller (ATMEL AVR, PIC, TI MSP430, ESP32, STM32 Arm Cortex M), Raspberry Pi, Python, Internet of Things (IoT), MATLAB, PCB design (Altium, KiCad, EasyEDA), Latex.

Intermediate: C, C++, RISC-V, Machine Learning & Deep Learning, Computer Vision, Data Structure, MySQL (Database), Make, Embedded Linux, Qt, Docker, Make, Git, Verilog, FPGA, LoRa (E90 DTU, E22, E30 EBYTE, LoRaWAN, Quectel) Sigfox, FreeRTOS, Zephyr

Beginner: AUTOSAR, PowerWorld, and API

Protocol: I2C, SPI, UART, USB, CAN, MODBUS (RS485, RS232), RTU, MQTT, TCP, HTTPS and Web Socket

Projects

- Design and developed FOTA Framework for STM32 Arm Cortex M4 Microcontroller
- Developed an IoT based ComSure Gateway Device for Industrial Application
- Developed a Low Power Non-Cellular Tracking Device
- LPWAN Enable IoT Based Patient Health Monitoring and Notification System using LoRa
- Developed a Real Time Fire Detection App using Machine Learning in flask
- Developed and Implementation of an IoT based Portable Smart Energy Meter
- Design and Implementation of Gait Measurement Device

Leadership & Roles

Present **Member**, Institute of Engineering and Technology (IET), **Membership No: 1101163344**
2020-2021 **Chairperson**, *IEEE Robotics & Automation Society IIUC Student Branch Chapter*, Chittagong

Honors & Achievements

- **Keynote Speaker**, “Intelligent Power Systems: Exploring the Application of Machine Learning”, organized by IEEE Power and Energy Society, International Islamic University Chittagong.
- **Best Paper Award**, EAI WiCON 2021 - 14th EAI International Wireless Internet Conference, at Orillia, Canada
- **Hackathon Problem Setter**, 2nd Chittagong Science Carnival, University of Chittagong
- Finalist, National Hackathon on Frontier Technologies, 2020

References

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| <ul style="list-style-type: none">▪ Dr. Hongjie Ma
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I, Sayed Tanimun Hasan, hereby declare that all the information stated above is correct.