LÊ HOÀNG KHANH

Embedded Software Engineer

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CAREER OBJECTIVE

A highly motivated and detail-oriented Embedded Software Engineer with a robust academic foundation in embedded systems, C/C++, and microcontroller programming. I am eager to leverage hands-on experience gained through academic projects and internships in the development and testing of embedded software to contribute to innovative solutions within the industry. I seek a challenging position in a dynamic organization where I can apply my skills in low-level programming, hardware-software integration, and problem-solving while further advancing my development expertise.

CERTIFICATIONS

- **August 2021** - Certificate of completion Agile & Scrum Training course of DEK Technologies Vietnam
- **January 2022** - Certificate of attendance AMO2021-UIT
- **March 2024** - Certificate of completed the course of BGSW-VN Embedded Academy
- **June 2024** - IELTs overal 6.0

EDUCATION

Degree: Bachelor of Computer Engineering
University: University Information & Technology (UIT)
Field of study: Embedded Systems and IoT
Time: November 2020 - September 2024
GPA: 7.89/10

INTERESTS

- Reading novels and exploring storytelling
- Playing video games and analyzing game mechanics
- Writing code and working on side projects
- Exploring new technologies and continuous learning
- Game development and machine learning experimentation

SKILLS

SOFT SKILLS :

- Self-study, strong learning and adapting to new knowledge
- Ability to work independently and manage time effectively
- Strong problem-solving and analytical abilities

HARD SKILLS:

- Proficient in C/C++, Assembly, and Python, with working knowledge of HTML, CSS, JavaScript, and Hardware Description Languages (HDL).
- Solid foundation in Object-Oriented Programming (OOP), clean code principles, and algorithm development.
- Fundamental understanding of front-end and back-end development, machine learning, Linux, and application development.
- Experienced in programming a wide range of microcontrollers, including STM32, ESP32, and Arduino, with expertise in integrating and operating various sensors and actuators.
- Skilled in ADC and PWM control, with in-depth knowledge of communication protocols (e.g., UART, I2C, SPI, CAN), wireless protocols (BLE, Wi-Fi, LoRa), and network protocols (TCP/IP, MQTT).
- Strong understanding of electrical concepts, with the ability to design circuit schematics and PCB layouts.
- Proficient in reading datasheets and English technical documentation, with excellent English communication skills.

WORK EXPERIENCE

April 2024 – October 2024 | **BOSCH Global Software Technologies**

Embedded Software Engineer Intern
Airbag team EA-VN

Main Responsibilities:

- Supported unit testing and integration testing processes.
- Revised documentation and updated code based on client specifications.

Knowledge Acquired:

- Gained expertise in AUTOSAR, diagnostics, DEM (Diagnostic Event Manager), and CanTP (CAN Transport Protocol).
- Proficient in using industry-standard tools such as VectorCast, Rhapsody, and CANoe.
- Acquired insights into the airbag production process for automotive applications.

Skills Developed:

- Efficiently located and utilized documentation and instructional videos for self-learning.
- Enhanced code tracing capabilities for debugging and optimization.
- Prepared comprehensive test cases for both unit and integration testing.
- Managed work packages independently, including task estimation and execution.
- Experienced in working within the Agile Scrum framework for project management.

PROJECTS

Project: A lock using magnetic card (July 2020 - November 2020)

Description	A secure and convenient access control solution that utilizes a magnetic card for entry. This system reads the magnetic stripe on a designated card to unlock doors, offering a contactless and efficient way to manage access. Ideal for both residential and commercial applications, it ensures enhanced security by limiting entry to authorized cardholders only. The magnetic card lock is easy to install, user-friendly, and designed to provide reliable protection, making it suitable for offices, and restricted areas.
Technologies	Arduino, C++, RFID
Source code	https://github.com/KhanhEK2846/Open-door-with-magnetic-card

Project: A smart IoT system for garden management (2023 - 2024)

Description	This system comprises a network of nodes that communicate using LoRa technology, organized in a tree topology with self-healing capabilities similar to mesh networks. Each node monitors environmental conditions and autonomously waters plants as needed. Users can control individual nodes directly via Wi-Fi or manage the entire network through a central server. In case of any anomalies, real-time alerts are sent to users via Gmail or WhatsApp. The system is designed for scalability, allowing easy integration of additional nodes as needed.
Technologies	ESP32, Arduino, Node-Red, LoRa, WiFi, MQTT, mesh topology, tree topology, HTML, CSS, Javascript, C++, Firebase, PCB, Gmail, WhatsApp, RTOS
Source code	https://github.com/KhanhEK2846/A_smart_IoT_system_for_garden_management