Tran Anh Khoa

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**EMBEDDED SOFTWARE ENGINEER**

**ABOUT ME**

Recent graduate with a Bachelor’s degree in Computer Engineering with internship experience at Bosch Global Software Technologies Vietnam. Passionate about the embedded software development field, with hands-on experience from academic projects and internship. Eager to apply my technical knowledge and passion in a challenging role to develop and contribute to impactful projects in the embedded systems industry..

**EXPERIENCE**

*04/2024-10/2024* **Embedded Developer Intern** at **Bosch Global Software Technologies Vietnam (current position)**

* Collaborated with the R&D team to develop and optimize embedded software for cutting-edge projects focused on innovation and advanced technologies.
* Assisted in designing, coding, and testing firmware for microcontrollers and embedded systems, ensuring functionality and efficiency.
* Participated in debugging and troubleshooting hardware-software interactions, gaining experience with tools such as JTAG debuggers, logic analyzer, CAN Vector.
* Contributed to the development of low-level drivers and real-time systems, improving system performance and reliability.
* Supported the team in conducting research and prototyping new technologies for embedded solutions, fostering a deeper understanding of the innovation process in product development.
* Enhanced technical documentation skills by preparing reports and documentation for firmware and driver development.
* Worked closely with cross-functional teams, including hardware engineers and software developers, to ensure seamless integration and alignment of embedded systems.

**PROJECTS**

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| *11/2023-12/2023* | **Digital Real-time Clock using STM32 Microcontroller**  - Researching the datasheet of the DS1307 and STM32 Reference Manual.  - Developing the driver for I2C communication between the microcontroller and the DS1307, LCD screen.  - Building the functionality: adjusting time and date through buttons, setting the alarm when the desired time reaches, storing data when power loss. |
| *09/2023-12/2023* | **STM32 Driver Development for Serial Communication Protocols**  Based on the datasheet of the STM32 microcontroller and sensor, developing driver for STM32 to communicate with peripherals based on serial communication protocols such as UART, I2C, SPI, 1-Wire, CAN.  - Researching the STM32, peripherals‘s datasheet and STM32 Reference Manual.  - Researching about serial communication protocols: UART, SPI, I2C, 1-WIRE, CAN.  - Configuring the registers of STM32 to develop driver for peripherals. |
| *11/2023-12/2023* | **Grocery Store Management App using QT/C++**  - Object-oriented design for classes: customer, merchandise and cart.  - Design UI for the app.  - Developing functionality for customer information management, inventory management, invoices generation for customer’ s shopping cart. |
| *03/2023-06/2023* | **Developing IoT board to automate home and remote control.**  - Programming ESP32 microcontroller: auto mode, manual mode, timer.  - Building a web interface to control hardware using HTML/CSS/JavaScript.  - Designing PCB for the board. |
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| *06/2024-08/2024* | **Developing the TEE OS for Raspberry Pi**  - Investigated the document of OP-TEE, architecture of the TEE OS.  - Developing the trusted applications for the OP-TEE for creating key pair, storing keys securely, loading the keys for doing cryptographic operation in Trusted OS.  - Building the TEE OS and deploying on Raspberry Pi 3 for prototyping. |

**EDUCATION**

*2020-2024:* **Computer Engineering Technology**

*HCMC University of Technology and Education*

*GPA: 7.80 / 10*

**CERTIFICATE**

**TOEIC Listening and Reading Certificate**

Total score: **725**

08/2023 – 08/2025

**SKILL**

**Programming Language:** C/C++, Shell Script, Rust.

**Microcontroller:** STM32, ESP32, 8051, Arduino.

**Serial Communication Protocol:** UART, I2C, SPI, 1-WIRE, CAN Bus.

**Lab Equipment:** Logic Analyzer, VectorBox.

**OS:** RTOS, Linux.

**Version Control Systen:** Git, GitHub.

Object-Oriented Programming, Data Structure and Algorithms.

Working with Linux Environment.