# HOANG VAN GIOI

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## *Education*

**Posts and Telecommunications Institute of Technology** *October 2020 - Present*

Electrical and Electronics Engineering Technology *Specialization: Robotics Engineering*

**FPT Software Academy - University Partnership Program** *June 2024 - August 2024*

Course: C/Embedded Programming *Final grade: 90/100*

## *Technical Skills*

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|---|---|
| **Programming Languages** | C, C++, Python, Bash |
| **Embedded Linux** | Yocto/BitBake, Linux Kernel, Device Drivers, Systemd, QEMU |
| **Embedded Systems** | STM32 (ARM Cortex-M), ESP32, FreeRTOS, UART/SPI/I2C |
| **Networking & IPC** | TCP/IP, MQTT, HTTP, WebSocket, Unix Domain Socket |
| **Development Tools** | Git, CMake, Makefile, GDB, VS Code, Keil uVision |

## *Work Experience*

**TechMaster Vietnam Ltd** *April 2025 - June 2025*

*Backend Developer*

- Developed RESTful APIs using Go (Iris framework) for data exchange between a mobile app and database.
- Engineered a CI/CD pipeline with GitHub Actions and Terraform to automate Go application deployment to AWS.
- Built and deployed a high-performance C++ microservice with PaddleOCR for real-time text recognition, optimizing for low-latency inference.

## *Technical Projects*

**Industrial IoT Telemetry Gateway** *github.com/hoangvangioi/industrial-iot-gateway*

*Technologies: C, C++, Linux Kernel, Yocto, BitBake, WebSocket, IPC, Systemd, QEMU, Flutter*

- Developed a full-stack embedded Linux telemetry system featuring a custom kernel character driver, multi-process C++ pipeline with Unix Socket IPC, and realtime WebSocket streaming.
- Built a custom Yocto image with systemd integration and successfully validated the complete system on QEMU.

**6-DOF Robot ARM Control System** *github.com/hoangvangioi/robot-arm*

*Technologies: C/C++, FreeRTOS, OpenCV, Python, Socket Programming, Inverse Kinematics*

- Developed a 6-DOF robotic arm using STM32F103C8T6, employing FreeRTOS for task management to ensure real-time execution.
- Integrated OpenCV with ArUco markers for object tracking and generated precise PWM servo control signals.

**FreeRTOS-Based Light Meter** *github.com/hoangvangioi/freertos-stm32f103c8t6*

*Technologies: C, FreeRTOS, I2C, SPI, STM32 Standard Peripheral Library*

- Implemented a light meter on STM32F103C8T6 using a BH1750 sensor and displayed real-time data on a NOKIA5110 screen.
- Designed a multi-task architecture under FreeRTOS, ensuring a highly responsive user interface and real-time data processing.