

VAN VU TRUONG

Da Nang, Vietnam | truongvanvu1@gmail.com | +84 96 852 3341 | [Portfolio](#)

[linkedin.com - truong van vu](#) | [GitHub - truongvanvuembedded](#)

Education

Danang University of Science and Technology (DUT), Da Nang, Vietnam

2019 – 2023

- Major: Bachelor of Engineering in Mechatronics Engineering

Professional Interests

- Embedded Software & Firmware Development: Bare metal and Event-Driven programming.
- Microcontrollers (ARM Cortex-M, ESP32, STM32, Renesas).
- Embedded Software Testing: unit, integration, comprehensive and system test.
- Embedded Software Design: System, basic and architecture design.
- Automation: scripting and tooling to improve development efficiency.

Professional Experiences

Embedded Software: ASTI Research and Development Vietnam (On-Site)

09/2023 – present

Project 1: AGV – Automated Guided Vehicle

- Responsibilities:
 - Tune and optimize line following algorithm for factory environment
 - Calibrate sensors to improve path detection accuracy
 - Debug and validate system performance during real operation
- Achievements:
 - Improved path detection accuracy

Project 2: Ebike – Vehicle Control Unit for Electric Bike

- Responsibilities:

- Analyzed system requirements and performed basic to detailed software design.
- Designed layered embedded software architecture (HAL / Middleware / Application).
- Developed firmware modules for vehicle control and safety logic.
- Create and implement units, integration, comprehensive, and system tests.
- Debug and validate system performance during operation.
- Design mechanisms to protect and synchronize data.
- Design and develop firmware update mechanisms.

- Achievements:

- Delivered stable and production-ready VCU firmware for electric bike.
- Successfully validated VCU firmware with stable real-world vehicle operation.

Project 3: NMEA 2000 IOT – Marine controller.

- Responsibilities:

- Implement NMEA 2000 parameters such as fuel level, engine data, and navigation information
- Render real-time vessel data on the onboard display
- Develop communication with backend server to monitor via web.
- Develop BLE communication to monitor via mobile app.
- Research and integrate GNSS positioning using SIM module

- Achievements:

- Delivered a marine IoT controller compliant with NMEA 2000 standard.
- Enable real-time monitoring onboard display and remote application.
- Increase accuracy in tracking.

Project 4: MPP Charger System.

- Responsibilities:

- Analyzed system requirements.
- Solely responsible for the end-to-end firmware development of the MPP Charger System.
- Develop communication with MPP and Bidirectional Converter to synchronous data and control.
- Designed and implemented system state management and safety mechanisms.

- Debugged and validated system behavior during charging and discharging modes.
- Developed Python-based simulation and monitoring tools for debugging and evaluation.
- Implemented data logging mechanisms to record system data during error conditions in released products.
- Implemented user interface display for system status and operational information.
- Achievements:
 - Released a stable firmware version, currently undergoing long-term system testing and logging for evaluation prior to production release.
 - Domain: Power Electronics, Energy Management

Project 5: MPP Charger.

- Responsibilities:
 - Study and understand existing hardware and software architecture.
 - Read and analyze hardware schematics.
 - Debug firmware to understand system behavior.
 - Implement new features based on customer requirements.
 - Perform functional testing before release
- Achievements:
 - Released a new feature to customers.

Internship: Tan Long F&B Da Nang

04/2023 – 9/2023

Project: Dish-Washer machine

- Responsibilities: Designed and implemented the full pipeline from scratch: data analysis, data engineering workflows, computation, system design, and software and hardware development.

Skills

Programming Languages

- C, C++, Python

Embedded Systems

- MCU: STM32, ESP32, Renesas, Arduino
- RTOS: FreeRTOS
- GUI: LVGL

Communication & Protocols

- CAN, NMEA 2000
- UART, SPI, I2C, RS485
- HTTP, MQTT
- BLE, Wi-Fi
- NCI

IoT & Connectivity

- GNSS positioning (AssistNow Online / Offline, Cloud-Locate, Cell-Locate)
- SIM-based cellular communication

Testing & Debugging

- Unit testing: Ceedlings
- Debugging: JTAG, SWD, OpenOCD.
- Tools: Logic Analyzer, Oscilloscope
- CAN tools: Vector CAN, Kvaser.

Source control

- Git

Build & Development Tools

- CMake, Makefile, Docker
- OTA & Bootloader (OTA HTTPS)

Domains

- Electric Vehicle (VCU)
- Marine Systems (NMEA 2000)
- Power Electronics & Energy Management
- Robotics (AGV)

Others: Problem Solving, Teamwork, Time Management, GUI Design, Communication.

Professional Certificates

- [Level-Up C](#)
- [Mastering Micro Controller and Embedded Driver Development](#)
- [C Programming for Embedded Applications](#)
- [Test-Driven Development in C++](#)