

PHÁP NGUYỄN

EMBEDDED ENGINEER

INTRODUCTION

I am a dynamic individual passionate about developing firmware for IoT devices, with extensive experience in smart home systems. I bring a comprehensive perspective on designing control and data acquisition products in real-world applications.

WORK EXPERIENCE

EMBEDDED ENGINEER

2023 - 2025 | SKYTECH

- Developed firmware for touch switches, context switches, light dimmers, schedules, etc.
- Built gateways for data acquisition and device control.
- Developed firmware using ESP WiFi Mesh.
- Created low-power device solutions.
- Installed devices in real-world home settings.
- Developed apps on Linux boards using Qt.

EDUCATION

COMPUTER ENGINEERING

INDUSTRIAL UNIVERSITY OF HO CHI MINH CITY | 2019 - 2024

- Completed project on smart home devices
- Participate in creativity at the electronics club

KNOWLEDGE

- Programming: C/C++, Python
- Microcontrollers: Arduino, STM32, ESP32, ESP8266, MCU 32bit,...
- Linux Boards: Raspberry Pi, Soc Mediatek
- Have knowledge about WiFi, BLE, Zigbee, 4G (Queitel, SIMCOM,...)
- Communication Protocols: I2C, UART, SPI, RS232, RS485, USB,...
- Networking: TCP/IP, MQTT, HTTP, CoAP, WebSocket, Socket.IO
- Operating System & Programing Linux: RTOS (Queue, Mutex, Semaphore, etc.),
- Build OS custom, project C++ with Yocto Project (wayland, x11).
- Build multi media using GStreamer (audio, video, extract frame,...)



13/12/2001



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<https://www.facebook.com/profile.php?id=100055852021653>



<https://github.com/yarncode>

PROGRAMMING LANGUAGES

JAVASCRIPT, HTML, CSS

C/C++ (FIRMWARE)

VUEJS, REACTJS (FW/LIBS)

ELECTRONJS, QT (DESKTOP-APP)

NODEJS (BACKEND SERVER)

MONGODB (NO SQL)

PROJECTS

LIGHT DIMMER

2023 - 2024

Description: An Android app and ESP32 firmware project to control the brightness of dual-color (white and yellow) lights with features including:

- Adjustable brightness via the app
- OTA updates for devices
- Scheduling on/off (via crontab)
- WiFi configuration for devices

FIRE ALARM SYSTEM

2024 - present

Description: A comprehensive system including desktop, web, mobile app, and a cloud VPS server.

- User interface for registration, login, device management
- Temperature and smoke level monitoring configuration
- Remote relay-based fire alarm actuation
- In-app alerts when sensor thresholds are exceeded
- Custom ESP32 firmware for gateway and nodes
- Communication protocols: WiFi Mesh, Ethernet, 4G, MQTT, Socket

SMARTHOME TOUCH

2023 - present

Description: A private company project for firmware development of a series of WiFi touch switches using Mesh, for home device control.

- Remote device control
- OTA firmware updates
- Scheduled on/off functionality
- Scene switch control

SMART WATER METER

2023 - 2024

Description: A private company project to develop firmware using ESP32-CAM for remote water consumption data collection.

- Image data sent to the server for analysis and storage
- Internet connectivity via Quectel NB-IoT module
- Device enters sleep mode after data transmission

MEDIA PLAYER PANEL LCD

2023 - 2024

Description: A media player app using Qt, GStreamer, and OpenCV to display images, audio, and video streamed via HLS, RTSP, FLV, etc.

- Built for public communication systems
- Runs on a customized Linux board
- Built with the Yocto Project.