Le Huynh Van

Computer Engineering

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WORK EXPERIENCE

Computer Engineering Topics (University Project)

8/2023 - 12/2023

RESEARCH ON GLADE IC DESIGN SOFTWARE.

- Research on the features, advantages, and limitations of the software. Installed and
- Configured the environment on both Windows and Linux.
- Designed and simulated basic integrated circuits using 500nm technology.

Graduation thesis (University Project)

1/2024 - 5/2024

MSP430 MICROCONTROLLER TECHNICAL APPLICATION PRACTICE KIT

- Designing an MSP430F5438A Devkit based on the BSL method.
- Designing a code flashing interface using Python.
- Designing peripheral support board for Microprocessor Lab.
  - Link project: https://vansilver.github.io/VanSilver-Portfolio/#projects

Internship - VTV Can Tho (University Project)

20/05/2024 - 29/06/2024

DESIGNING A TALLY LIGHT SYSTEM FOR USE IN LIVE STREAMING.

- Programming and hardware design.
- The system is designed based on LoRa technology.
- The system is controlled via ATEM Switchers.

LOVAD

9/2024 - Now

R&D IOT SOFTWARE ENGINEER

- Participate in the development of the company's software using WPF and .NET Framework.
- Contribute to building and developing databases for software using PostgreSQL.
- Develop LED matrix control circuits and write APIs to connect to the company's Parking software via Modbus TCP/IP.
- Training image data for AI models.

UIT ASIC LAB

10/2025 - Now

RESEARCH ASSISTANT

- Research on assembly language instruction set of RISC architecture

FREELANCE PROJECTS

SMART STAIR LIGHTING ECOSYSTEM (R&D & COMMERCIALIZATION)

9/2024 - 11/2025

Full-stack Embedded and IoT Engineer (Hardware Design, Firmware, Web Interface)

Description: researched and developed a smart lighting solution evolving through 3 hardware generations to solve installation complexity, **reducing wiring from 25 lines down to just 2 lines**.

Key Features & Technical Evolution:

- **Gen 1: Logic Expansion (25-wire topology):**
  - Utilized **74HC595 Shift Registers** to expand GPIOs for controlling 25 individual LED steps via logic gates.
  - *Challenge:* Complex wiring (25+ cables from controller to steps) made installation difficult.
- **Gen 2: Addressable RGB (3-wire topology):**
  - Implemented **WS2811** protocol to create intelligent slave nodes, allowing 16-million-color control.
  - Reduced cabling to a **3-wire bus** (VCC, GND, Data), significantly lowering hardware costs.
- **Gen 3: PLC & RISC-V Distributed Control (2-wire topology):**
  - Developed a **Power Line Communication (PLC)** system, combining power and data onto a single pair of wires (**2-wire interface**).
  - **Architecture:** Designed a **Master-Slave** system.

- **Master (ESP32):** Handles WiFi, Web Server for configuration, and signal modulation.
- **Slaves (CH32V003 - RISC-V):** Custom PCB for each step to demodulate signals and drive LEDs.
- **DevOps/Toolchain:** Migrated CH32V003 development to **PlatformIO** and integrated **minichlink** to automate the build/flash process for mass production.

Technologies: ESP8266, ESP32, CH32V003 (RISC-V), 74HC595, WS2811, Altium Designer, C/C++, PlatformIO.
Link project: https://vansilver.github.io/VanSilver-Portfolio/#projects

Human presence sensor module

4/2025 - 5/2025

RESEARCH AND DEVELOP HARDWARE AND SOFTWARE

Human presence sensor communicates wirelessly with smart stairlight controller.:
Features:

- Human motion detection
- Send signal to Smart Stair Light by wireless communication to control stair lights
- Set advanced parameters for sensors via webserver

Human presence detection circuit using HLK-LD2420 and ESP8266.
Programming firmware on ESP8266 using arduino framework.

Heating lamp control circuit

1/2025 - 3/2025

RESEARCH AND DEVELOP HARDWARE AND SOFTWARE

Features:

- Smart heater circuit with 3-level temperature control and motion-triggered lighting.
- Set parameters on webserver.

PCB circuit design for heating lamp control.
Programming firmware on ESP8266 using arduino framework.

OBJECTIVE

- Desire to apply the electronics and programming knowledge learned into practical applications.
- Desire to participate in creative and challenging projects, to enhance personal skills and contribute to the company's success.

EDUCATION

9/2020 - 9/2024

MAJOR: COMPUTER ENGINEERING

Can Tho University

- Graduated early 0.5 years.
- GPA: 3.24/4 - 8.1/10
- Graduate valedictorian with upper second-class honours

8/2025 - 2027

Major: M.Eng Computer Engineering

Viet Nam National University HCMC - University Of Information Technology

Entrance exam 8.0 points

CERTIFICATIONS

2023

B1 English certificate

SKILLS

Programming Languages

- Core: C, C++, Python
- Others: C#, HTML/CSS/JavaScript

Hardware & Microcontroller

- MCU: STM32 (ARM Cortex-M), ESP32/ESP8266 (SoC), CH32 (RISC-V), MSP430, PIC
- SBC/Linux: Raspberry Pi, Orange Pi
- Modules: EC200U (4G/LTE), Radar HLK-L

Communication Protocols

- On-board:UART, I2C, SPI
- Industrial/IoT: Modbus RTU, MQTT, HTTP/WebSocket, TCP/IP

Tools & IDEs

- IDE/Compilers: VSCode, PlatformIO, STM32CubeIDE, KeilC
- Hardware Design: Altium Designer, EasyEDA, Proteus
- Version Control: Git, GitHub/GitLab, SVN
- Debug tools: Oscilloscope, Soldering & Circuit Debugging

Soft Skills

ACTIVITIES

15/7/2023 - 21/7/2023

GREEN SUMMER YOUTH VOLUNTEER CAMPAIGN 2023

- Participating in gift giving for families under social welfare - Cleaning and tidying up streets

- Time Management
- Problem solving
- Teamwork

INTERESTS

I like soccer, watch movies, listen to music