NGUYEN MINH TIEN

EMBEDDED FIRMWARE ENGINEER

About me

Responsible and perfectionism in works, humble and ready to acquire knowledge, logical thinking and self-study during work; then I believe that I can contribute for the development of the company

Contact

- November 22, 1998
- nguyen.minhtien98@gmail.com
- Ho Chi Minh, Viet Nam
- 0797557533
- https://github.com/spiderock98

Education

ELECTRONICS ENGINEERING AND INDUSTRIAL INFORMATICS

09/2016 - 02/2021

UNIVERSITY OF TRANSPORT AND COMMUNICATIONS CAMPUS IN HO CHI MINH

GPA: 3.15/4

Technical Skills

UART / I2C / SPI / MQTT / WebSocket /

8051 - KeilC

PIC16 - CCS C Compiler

ESP8266, ESP32 - ArduinoIDE

STM32F1 - KeilC + HAL + CubeMX

C/C++

Algorithm

Work Experiences

ELEX LAB - ELEXLAB.VN   06/2020 - 09/2020

Internship - Back-end IoT Developer

- Support 2 IoTs Smart Home projects for company
- Offer product functionality based on specific description of customers
- Make final decision on hardware and software solution for projects
- Consulted hardware team to debug some hardware issues
- Build backend NodeJS server and frontend web UI
- Build firmware on ESP8266 using Arduino IDE
- Support customers after product was released

- Teammate: 2 members - 1 hardware, 1 software, 1 firmware
- Role: software, firmware

Projects

DIGITS RECOGNIZED ON SCADA SCREEN

05/2019 - 07/2019

- As request of TTI Viet Nam VSIP2
- KNNs algorithm to train 10-digits model
- Implement computer vision with Python on Raspberry Pi 3 (Debian)
- Threading in Python to handle two cameras in parallel for real-time responding
- Build PyQT5 Linux application to configure image parameters

- Teammate: 3 members
- Source: https://github.com/spiderock98/KNN-DigitRecognize

HTML / CSS/ JavaScript

NodeJS Framework / Git / Github

English

Computer Vision (Python)

Microsoft Office

Prizes and Awards

STUDENTS AND SCIENTIFIC RESEARCH CONTEST

08/2019

2nd Place

UNIVERSITY OF TRANSPORT AND COMMUNICATIONS CAMPUS IN HO CHI MINH

Interests

DIY Pet Projects

Power Electronics

STM8

ESP32

Novuton

LINE FOLLOWER ROBOT

01/2020 - 04/2020

- Organized at Binh Dinh Province as request of of my current university - in activities of College Admissions
- Implement on Arduino Nano
- Hardware: TCRT5000 - Module photodiode line follower, L298N - DC motor driver
- Script to calculate average ADC value then applied smith trigger window to determine line

- Teammate: 6 members - 2 organizers, 3 trainers, 3 firmware, 3 hardware
- Role: trainer, firmware
- Source: https://github.com/spiderock98/XeDoLineUTC2

AUTOMATE BELL RINGGING

02/2020 - 05/2020

- As request of Cao Moc Church (Thai Binh Province)
- PIC16F887 interact with sensors drive motor
- Dimmer AC Phase Angle to control bell (~300kg) pull speeds
- Rotate Encoder get feedback current angle to change bell direction, protect over-rotation, prevent starting system if bell still shaking
- Arduino Pro Mini + LCD 1602 + matrix keypad as controller to configure whole system, DS3231 real-time IC to schedule bell ringing on daily time, in duration

- Teammate: 4 members - 2 firmware, 2 hardware, 2 mechanical
- Role: firmware
- Source: https://spiderock98.github.io/RingTheBell/

PLATFORM IOTS IN AGRICULTURE

03/2020 - 12/2020

- NodeJS in the back-end with 3 child server: webserver, camera WebSocket server, data-command WebSocket server
- Pair new gateways (ESP32) with user account by send network info from dashboard application to gateway via UART
- Pair new garden devices (Arduino Nano ATMega328P) with gateway by scanning QR code through camera stream of ESP32
- Get camera stream from ESP32-CAM back to camera WebSocket server for display in dashboard as surveillance camera
- Garden devices and server transfer information (sensor values, threshold config, control commands) via gateway back to data-command WebSocket server
- Firebase Realtime Database to store user and device information
- Firebase Authentication to authenticate users
- ElectronJS front-end framework to build desktop application dashboard, monitor sensor, upload configs (ssid, password, userID, usb port, upload baudrate) to setting blank new gateway. Execute python script in background process to detect USB port, get network info
- Visualize sensor data using Google Chart API
- Locate place using Google Map API
- Deploy project on Raspberry Pi 3B, router port forwarding to access server from different networks

- Teammate: 3 members - 1 software, 2 firmware, 3 hardware, 2 mechanical, 1 PCB designer
- Role: firmware, software, hardware
- Source: https://github.com/spiderock98/PairDevices