





# DUY KIEN PHAN

- Embedded Programming Student -

I'm a senior student at HCMUTE. As an Electronics Engineering student. I have a strong passion for computers and technology, and I am currently expanding and honing my specialized knowledge in embedded systems, software programming.

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## EDUCATION

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2021 - 2025

### HCMC University of Technology and Education

Automation and Control Engineering Technology

## TECHNICAL SKILLS

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- Programming language: C/C++, Python
- Microcontrollers: STM32, STM8, AVR, ESP, PIC.
- Embedded computer: Raspberry Pi series.
- Have basic knowledge in Linux OS, RTOS.
- Working knowledge of Task, Queue, Schedule, Semaphore, Mutex
- Experienced in Bare-Metal programming, Stack, Bootloader.
- Peripherals used: Timer, ADC, DMA, Watchdog.
- Communication protocols: USART, I2C, SPI, CAN.
- PCB design using Altium Designer.
- English Proficiency: IELTS 6.5 (expectation)

## WORK EXPERIENCE

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### Embedded Engineering Freelancer

September 2021 - Present | Thu Duc District, HCM City

- Planning and developing project procedures.
- Researching and implementing technology models.
- Consulting and training students participating in science and engineering fairs.
- Communicating with customers.



### Embedded Programming Intern • TMA Solutions

July 2024 - October 2024 | District 12, HCM City

- Developed technical documentation for features.
- Participated in and supported training sessions for colleagues on technical of the new project.
- Researched Interrupt Handler, DMA, Watchdog Timer, Memory Management, Project Workflow, Programming Standard, etc.
- Worked with ARM Cortex M3 and its SDK.



### STEM Teacher • Tech School and Startup VNNEXT

May 2022 - July 2024 | Thu Duc District, HCM City

- Teaching programming languages & algorithms (C/C++ & Python).
- Teaching embedded programming using modules available from Ohstem and Garastem.
- Researching and developing the teaching curriculum.
- Developing and repairing educational equipment.

## PROJECTS DETAIL

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### Tensile/Pressing Testing Machine

Embedded System • October 2024 - July 2025

A testing machine for flexible sensors, featuring stretching or pressing force, return impacted force and resistance of the sensor. This machine has a real-time TFT display and an evaluation application.

Technology: STM32 with RTOS, SPI, USART & PyQT5.

### A Wireless Computer Mouse for Hand-Disabled Users

Embedded System • January 2024 - June 2024

A computer mouse is worn on the head for hand-disabled users. The device enables cursor control via head movements and integrates with a custom PyQt5 application for voice commands.

Technology: ESP32 for I2C signal processing from the MPU6050 and communication with a Bluetooth app.

### Flexible Sensor on Car

Tiny Machine Learning • October 2023 - June 2024

The solution to minimizing physical buttons that integrated conductive sewing thread into the car's leather upholstery to detect touch signals via capacitance changes, enabling control of systems.

Technology: A machine learning model applied on Arduino Nano 33 BLE Sense.

### Building a set of device and software to support blind text editing

Software • August 2023 - March 2024

A text editing software designed for blind people includes a special keyboard for typing. It can also convert Vietnamese characters into Braille, the language used by blind individuals.

Technology: AVR Chip for GPIO signal processing, USART & PyQT5.

For more details on my previous projects, please refer to <https://duykienphan.github.io/>.

## ACHIEVEMENTS

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- Tuan Nghia Nguyen, Duy Kien Phan, Ngoc Ha Tang and Chi Cuong Vu, "Flexible capacitive touchpad for real-time gesture recognition in automotive lighting", VKU's The 13th Conference on Information Technology and Its Applications, 2024
- Duy Kien Phan, Van Hoang Anh Phan, Minh Thuan Vo, Phu Khang Tran, "Building set of device and website to support blind children in learning Braille words following Vietnamese textbook", BLU Journal of Science, Volume 3, 2024
- University student's Robotics competition certifications (Throughout 2021 to 2023)
- Top 30 project in Final Round VNEXPRESS Creative Science Contest (2023)
- Second prize in Vietnam Science and Engineering Fair (VISEF) - National Merit Competition (2021)
- Third prize in Creative competition for youth and children - Provincial Merit Competition (2021)
- Special prize in Creative competition for youth and children - Provincial Merit Competition (2020)
- Second prize in Vietnam Science and Engineering Fair (VISEF) - Provincial Merit Competition (2019)