



NGUYEN DUC HUY

Address: 62 Nguyen Chi Dieu, Son Tra District, Danang

Phone: Vietnam (+84) 984 875 261

Taiwan (+886) 905 101 134

Gender: Male

Birthday: 1994/06/23

Email: dhuy.nguyen94@gmail.com

LinkedIn: <https://www.linkedin.com/in/duc-huy-nguyen-242a69163/>

PROFESSIONAL SUMMARY

Being good at researching, designing operation system, having well-trained knowledge about *Digital Signal Processing*, *Machine Learning*, *Deep Learning*, and *Computer Vision*.

Being good at programming skills for more than *2 years* and *a year* with working on *Python* and *C++ programming language*, respectively.

Being cooperative and able to perform within a team-oriented atmosphere.

HIGHLIGHT ACADEMIC/INDUSTRY INTEREST

Master Research

Working on designing Artificial Intelligent (Deep Neural Network Model) for photoplethysmography (PPG) signal occurred on a blood vessel of the artery which is beneficial for estimating Blood Flow Volume. The current Industrial PPG sensor available in the market (smart-watches) cannot estimate Blood Flow Volume based on Neural Network Model. Ministry of Science and Technology (Taiwan) supports the project to use Artificial Neural Network for the Blood Flow Volume Estimation and implement on Cloud Application Platform.

Bachelor Research

Working on programming Automatic Vertical Car Parking based on Arduino and Programmable Logic Controller (PLC).

Designing a software interface to apply for Automatic Vertical Car Parking management.

WORK EXPERIENCE

2018-Now

Research Assistant

➤ *Sensors IC Lab, National Chiao Tung University, Taiwan.*
Research area: Applying Machine Learning, Deep Learning, and Digital Signal Processing for Handheld Bio-Medical devices and Remote Server involving:

- Research and implement Machine Learning Algorithms, Deep Learning Algorithms, and Digital Pre-Signal Processing Algorithms on the commercial applications applied for Handheld Bio-Medical devices
- Implementing Digital Signal Processing Algorithm on Firmware based on ARM Embedded Integrated Development Environment STM32-NUCLEO platform with using C++ such as Language Programming
- Design and Implement Digital Signal Processing used for Quality Control Criteria

- Evaluating and processing the Biomedical Digital Signals and Biomedical Database
- Design and implement the measuring user interface between Handheld Bio-Medical Devices and Laptops
- Experimentation of device-to-device connection
- ***Other small-scale projects involving:***
 - Working for small-scale projects related to Object Detection in the Applied Computer Vision using YOLO V3
 - Attending project using Duckietown Robot such as self-driving car based on Deep Learning Algorithm.
 - Working for small-scale projects related to the Digital Image Processing and Digital Image Filtering

2017-2018 Automation Engineer
Institute of Electronics, Information Technology and Automation (VielinaCR), Danang, Vietnam
Research aspect: Communication and Automation system.

- Study to design Supervisory Control and Data Acquisition (SCADA) architecture
- Design and program based on Programmable Logic Controller (PLC)

2016 Internship
Automation and Supervisory Control and Data Acquisition (SCADA) system

- Study and manage Automation System with Programmable Logic Controller (PLC) and Actuator System
- Research, manage and implement SCADA on the factory's operation

EDUCATION/LANGUAGES

2018-2020 Master Degree in Electrical Engineering and Computer Science, International Graduate Program
National Chiao Tung University (Top 200 Computer Science world ranking, 2020), Hsinchu, Taiwan.

- GPA: 91.34/100 – Ranks 1st place in a class of 22 students
- Thesis/ Graduate Project: 92/100
- Scholarship for Outstanding Student

2013-2017 Bachelor/Engineer Degree in Electrical and Electronic Engineering
Danang University of Science and Technology, Danang University

- Top 8 of outstanding undergraduate students, 2016
- GPA: 3.42/4.0
- Thesis/Graduate Project: 9.5/10
- Degree Classification: Excellent

Language *English: IELTS - 5.5/9.0; Chinese: Good Speaking*

TECHNICAL STRENGTHS

Programming Languages	Python, C/C++, Matlab Programming, Programmable Logic Controller Programming
IDE	Visual Studio Code, Sublime Text, IDE developed by JetBrains for Python (Pycharm) and C/C++ (CLion)
Databases	MySQL
Tools	GitHub, Docker, Matlab
Frameworks	<ul style="list-style-type: none">▪ Deep Learning Frameworks: PyTorch, Tensorflow, Keras, YOLO▪ Machine Learning Frameworks: Scikit-Learn▪ Digital Image Processing Frameworks: OpenCV▪ Digital Signal Processing Frameworks: Numpy, Pandas
Operating Systems	Linux (Ubuntu), Raspbian (Raspberry Pi OS), Windows
Markup Languages	HTML, CSS, LaTeX, Markdown

HONOR AND AWARDS

2020	Taiwan National Innovation Award renewal and issue the Excelsior Award in recognition of continuing innovations and advancements in R&D to the project
2019	Elite Scholarship for Students Award, National Chiao Tung University, Taiwan (R.O.C)
2018-2019	Awardee of National Chiao Tung University Scholarship for Master Program, Taiwan (R.O.C)
2016	Awardee of Scientific Research for Undergraduate Student, Danang University of Science and Technology, Vietnam

VOLUNTEER AND LEADERSHIP EXPERIENCE

2019-2020	Leader on Biomedical Digital Signal Processing and Artificial Intelligence, National Chiao Tung University, Hsinchu, Taiwan (R.O.C)
2012-2017	Vice monitor of class 12D3, Danang University of Science and Technology, Danang, Vietnam
2015-2016	Member of Scientific Research for Undergraduate Student, Danang University of Science and Technology, Danang, Vietnam

PUBLICATION

2019	<u>Pei-Yu Chiang, Paul C.-P. Chao, Tse-Yi Tu, Yung-Hua Kao, Chih-Yu Yang, Der-Cherng Tarn, and Chin-Long Wey, Duc Huy Nguyen, "Quality Evaluation via PPG on the AVFs of Hemodialysis Patients Based on Both Blood Flow Volume and Degree of Stenosis", 2019 IEEE SENSORS CONFERENCE, Montreal, Canada</u>
-------------	--

2020

Duc Huy Nguyen, Yu-Ting Chen, Tse-Yi Tu, Paul C.-P. Chao, Yu-Wei Fang, Bing Shi Lin "A New Blood Flow Volume Sensor with Embedded Estimation of SpO₂ to Maximize its Accuracy" 2020 Journal of Microsystem Technologies