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 (used for Working)

ndhuyvn1994@gmail.com (used for Academic)

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

Research Profile: https://www.researchgate.net/profile/Duc_Nguyen209

My Home Website: https://dhuynguyen94.github.io/

Name Card **Home Website**

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 **3** ***years*** with working on ***Python*** and ***C++ programming language***.
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. In addition, the Deep Neural Network Model is also implemented for PPG signal assessment. Currently, the Industrial PPG sensor available in the market (smart-watches) cannot estimate Blood Flow Volume based on Neural Network Model. Hence, the project is proposed and supported by the Ministry of Science and Technology (Taiwan) supports the project to use **Artificial Neural Network** for the Blood Flow Volume Estimation and implement it on **Cloud Application Platform**.

Bachelor Research Working on programming Automatic Vertical Car Parking based on Arduino and Programmable Logic Controller (PLC) and Microcontroller Programming with **C++ Programming Language**.

Designing the 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
  - Implementing Web-Server and Database Server with using Django Framework and PostgreSQL for Database Management System, respectively. The system is deployed on Heroku – Cloud Application Platform and Static IP Address using Python Programming Language
  - Designing and Implementing Deep Neural Network Model on Digital Signal Processing used for Signal Quality Assessment
  - Evaluating and Processing the Biomedical Digital Signals and Biomedical Database
  - Designing and Implementing 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.

- Designing the Supervisory Control and Data Acquisition (SCADA) architecture
- Designing and programming Automation and Actuator System with Programmable Logic Controller (PLC)

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

- Researching and managing the Automation and Actuator System with Programmable Logic Controller (PLC)
- Deploying the Supervisory Control and Data Acquisition (SCADA) on the factory management operation system

2015 - 2016 **Science research**

Researching and Applying the Rocker-Bogie Mechanism System for the Terrain Robot

- Calculating and Implementing mechanism's parameters and specification on Terrain Robot Design
- Deploying motor installation on Terrain Robot

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.

From 2021, National Chiao Tung University and National Yang Ming University are merged, which named *National Yang Ming Chiao Tung University* in 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 (Studying by myself)

Tools GitHub, Docker, Matlab

Frameworks

- Deep Learning Frameworks: PyTorch, 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, December	Taiwan National Innovation Award renewal and issue the Excelsior Award in recognition of continuing innovations and advancements in R&D to the project
2019, December	Futuristic Breakthrough Technology Award
2019, August	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

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
2019	Pei-Yu Chiang, Paul C.-P. Chao, Tse-Yi Tu, Yung-Hua Kao, Chih-Yu Yang, Der-Cherng Tarng, 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