

HAI PHAM DUC

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EDUCATION

Ho Chi Minh City University of Technology - Vietnam National University **Ho Chi Minh City, VN**
Expected May 2024
B.E in Computer Engineering. CGPA: 8.5/10

Coursework: Linear Algebra, Calculus, Data Structures & Algorithms, Probability & Statistics, Operating System, Computer Architecture, Internet of Things and Machine Learning

Deeplearning.AI Coursera **Online**

Coursework: Introduction to Tensorflow, Convolutional Neural Network and Structuring Machine Learning Projects

SKILLS

Programming Languages: C++, Python, Dart, Verilog, and LaTeX

Tools/Packages/Framework: Tensorflow, Pytorch, TFLite, Flutter, Git, Scikit-learn, Pandas, Numpy and matplotlib.

Hardware: Field-Programmable-Gate-Arrays (Xilinx and Intel) and Raspberry Pi.

Languages: English (IELTS 8.0), Vietnamese (fluent) and French (basic).

EXPERIENCES

ML4U Research Group - Research Intern *Sept 2022 – Present*

Project: *Domain Adaptation for Monocular Depth Estimation (Advisor: Dr. Nguyen Duc Dung)*

- Researching data-reconstruction methods to improve depth estimation in night-time conditions.
- Conducting experiments and evaluations of different models on Oxford RobotCar dataset.

HCMUT-VNU Computer Engineering Lab - Research Intern *Aug 2021 – Sept 2022*

Project: *FPGA-based Convolution Operation Acceleration (Advisor: Associate Prof. Pham Quoc Cuong)*

- Co-authored a paper published at [The First International Conference on Intelligence of Things 2022](#).
- Investigated Depthwise-separable convolution-based models: MobileNetV1 and EfficientNetV1 using Python.
- Verified Convolution Operation using Verilog HDL, achieving **0.224 GOP** per core in simulations.
- Conducted performance comparison with ARMv7 CPU using Python, recording **50X** speed increase.

PROJECTS

Sentiment Analysis System for Customer Reviews *Aug 2022 – Sep 2022*

- Collaborated in a team of 3 to build a NLP model for challenge 2 in Quy Nhon AI Competition 2022
- Adapted PhoBERT model and added custom classification layers. Ranked 38th in Challenge 2.

Credit Card Fraud Detector *May 2021 – Aug 2021*

- Participated in [Math and Science Summer Program 2021](#) as Data Science Mentee.
- Collaborated in a team of 3 to build a Credit Card Fraud Detector using Python (scikit-learn, numpy, pandas).
- Optimized XGBClassifier model and adversarial validation on the dataset (500+ thousand rows) to reduce **overfitting by 40%**, achieving **92% accuracy** on IEEE-CIS Kaggle Public Test Set.

Health Insurance Predictor *May 2021 – Aug 2021*

- Collaborated in a team of 3 to build a Health Insurance Predictor using Python (scikit-learn, numpy, pandas).
- Adapted XGBClassifier model and Principal Component Analysis method to build a ML pipeline.
- Verified performance using K-Fold Cross Validation, achieving **86% accuracy** on Kaggle Public Test Set.

"Uni-ify", university admission assistant for Vietnamese High School Students *Jan 2021– Dec 2021*

- Lead a team of 5 to develop a cross-platform application for High School Students to quickly navigate university admission in both private and public universities in Vietnam using **Flutter** and **BLOC** pattern.
- Received **Second Prize** (competed against 100 teams) in Bach Khoa Innovation Contest 2021.
- Funded **15,000,000 VND** by HCMUT-VNU to continue developing for internal usage.

PUBLICATIONS

Trung Pham-Dinh, Bao Bach-Gia, Lam Luu-Trinh, Minh Nguyen-Dinh, **Hai Pham-Duc**, Khoa Bui-Anh, Xuan-Quang Nguyen and Cuong Pham-Quoc. "[An FPGA-based Solution for Convolution Operation Acceleration](#)". In **The First International Conference on Intelligence of Things 2022 (ICIT 2022)**.

AWARDS

Pony Chung Foundation Scholarship *Dec 2022*

Awarded to top 30 most performing students in Vietnam National University Ho Chi Minh City

Outstanding Academic Performance Scholarship

Oct 2022

Awarded to top performance students in the faculty.

Second Prize Hack-a-thon, The 9th Vietnam Summer School of Science

Aug 2022

Highest Overall Score, Virtual-Micro Internship, University of Auckland 2022

Jul 2022

Awarded to students who achieved the highest overall scores in University of Auckland Micro-Internship to be selected to present their Final Presentation to their project employers.

Student with 5 Good Merits (Academic Year 2021- 2022), Faculty Level

May 2022

Second Prize Bach Khoa Innovation Contest 2021

Dec 2021

Ranked 2nd out of 100 teams.

REFERENCES

Associate Professor Pham Quoc Cuong

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