Hoang Dieu Vu

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My research interests include machine learning, deep learning and vision-based continual learning. In particular, I focus on designing and optimizing high-performance Machine Learning models.

EDUCATION

HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY (HUST) **HaNoi**

Master of Data Science *May 2019*

HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY (HUST) **GPA: 3.61/4.0 (top 5%)**

Bachelor of Information Technology *2014-2018*

LE HONG PHONG HIGH SCHOOL FOR THE GIFTED – NAM DINH **Mathematics**

Finalist in 2 continuous years of provincial contest for Mathematics *2011-2014*

WORKING EXPERIENCE

Research Assistant ***DATA SCIENCE LAB - HUST***

Jan 2016-present

Representation Learning, Big Data, Machine Learning

- Main Research: "Learning an effective representation for the hidden semantics"
- Funded by: US Office of Naval Research Global.
- Assisted Prof. Than Quang Khoat – data collection, novel modelling, designing and implementation, analysis visualization, reviewing/reporting line management and other paperwork.
- Projects
  - **Reducing overlapping for supervised dimension reduction**: Discussing and proposing an improvement for supervised dimension reduction framework.
  - **Revisiting supervised word embedding**: Investigate comprehensively a various of approaches to learn supervised word embedding, particular, supervised topic models based approaches.
    I have extensive experiments to prove the preeminence of my approach.
- Programming Language: C, C++, Python.
- Frameworks/Librarys: Pytorch, Tensorflow, numpy, pandas, sklearn, ...

Jan 2020-present

Vision-based Continual Learning

- Main Research: Human knowledge in Machine Learning models for big and streaming data
- Funded by: Vingroup Innovation Foundation.
- Assisted Prof. Than Quang Khoat and Prof. Khoa Luu.

R&D Executive — *CODELOVERS VIETNAM COMPANY*

The company work mainly with Japanese partner company. Some projects are related to IoT, Robotic, Computer Vision.

- **June – Dec 2018**
  OCR Project: Build an OCR application to automate image conversion to text entities for business card image, report directly to CTO.
- **Jan – Aug 2017**
  Sokoban Robot: Building a robot with Raspberry Pi 3 and Arduino Uno. Web service was implemted on Pi3 by NodeJS. Sokoban Robot will learn the given map then send the solution to Arduino to control the robot. Detail state of robot could be monitored on a web browser.

Business Analyst — *JAPAN SECURITIES INCORPORATED*

Aug - Dec 2018

- Implemented survey, analysis and designed IT system for a Vietnamese stock trading application by C#.

Teaching Assistant

Dec 2018 - present

- Introduction to Data Science.

Internship — *Data Science Lab - KAIST and Institute of Basic Science - Korea*

June 2019 - August 2019

Super-Resolution on Satellite Imagery using Deep Learning.

- Work with Prof. Meeyoung Cha and GIS team.
- Survey super-resolution algorithms and apply them to satellite images.
- Write a technical report at a workshop co-located with ICCV 2019.

KEY SKILLS

Programming

2016 - Present

- Basic: Latex, OpenOffice, Linux.
- Intermediate: C, C++, Java, Matlab, PHP, JavaScript, HTML, CSS, MongoDB, MySQL, ...
- Advanced: Python (using libraries: numpy, scipy, pandas, keras, Pytorch, ...)

Additional Skills

2016 - Present

- Latex: Writing technical or scientific documents.
- English: Writing and Reading papers.

COURSES

Machine Learning — *Prof. Andrew Ng*

- Unsupervised algorithms, supervised algorithms such as SVM, Regression, Neural Networks, ...

Deep Learning for Natural Language Processing — *Stanford University*

- Understanding the concepts of deep learning models, build and train a neural network for NLP.

Bayesian Model — *Prof. Than Quang Khoat (Head of Data Science Lab, HUST)*

- Understanding the basis of Bayesian models and topic models to apply for text mining.

Data Mining (Summer School 2016) — *University of Engineering and Technology*

- Understanding data mining techniques.

Data Science (Mini Course 2017) *Vietnam Institue for Advanced Study in Mathematics*

- Important trends of data science and its applications.

PUBLICATIONS

- **Vu Hoang Dieu**, Khang Truong, Khoat Than, Ngo Van Linh and Khanh Nguyen, *"Revisiting supervised word embeddings"*, Accepted in Journal of Information Science and Engineering, 2020 (SCIE, ISI indexed)
- C. Phentmunee, H. Doan Thi, **H. Dieu Vu**, D. Ahn, H.Cha, S. Han, and M. Cha. "Image Super Resolution Techniques Applied on Satellite Imagery" In International Workshop and Challenge on Real-World Recognition from Low-Quality Images and Videos, co-located with ICCV (rank: A*) , 2019
- Nguyen Trong Tung, **Vu Hoang Dieu**, Khoat Than, and Ngo Van Linh. 2018. *"Reducing Class Overlapping in Supervised Dimension Reduction"*. In Proceedings of the Ninth International Symposium on Information and Communication Technology (SoICT 2018). ACM, New York, NY, USA, 8-15. DOI: https://doi.org/10.1145/3287921.3287925

HONORS & AWARDS

- Best Bachelor's Thesis Award (Class 2018).
- Lotte Scholarship for top 1% IT Engineering student (2018).
- Six times grantee - full tuition scholarship for 3% best students in HUST (2014 – 2018).

LANGUAGE

- Vietnamese: **Mothertongue**
- English: **Intermediate**

REFERENCE

- **Prof. Than Quang Khoat**, PhD (Supervisor)
  VinAI Research Scientist
  Head of Data Science Lab - Hanoi University of Science and Technology
  Address: Room 1002, building B1, No.1 Dai Co Viet Road, Hanoi, Vietnam
  Email: khoattq@soict.hust.edu.vn
- **Prof. Khoa Luu**, PhD (Co-supervisor)
  VinAI Research Scientist
  Head of Computer Vision and Image Understanding (CVIU)
  Computer Science and Computer Engineering Department
  University of Arkansas
  Address: JBHT 521, Fayetteville, AR 72701
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