Duc-Long Vu

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EDUCATION

Posts and Telecommunications Institute of Technology, Hanoi, Vietnam

- B.E. in Electronic and Telecommunication Engineering   Sep 2018 – Apr 2023
- *Thesis: "Research and develop a machine learning model for supporting gene analysis and diagnosis of disease"* **(Grade: 10/10)**
- Cumulative GPA: 3.42 / 4.00 (Top 2% - Faculty ranking: 7/430)

RESEARCH EXPERIENCE

Data and Intelligent System Laboratory, PTIT

- **Role**: Research Assistant - Team Leader   Oct 2020 – Current
- **Supervisor:** Associate. Professor. Hai-Chau Le
- **Project:**
  - Design A low-cost AI-based smart wearable device for supporting visually impaired people (PI)
  - Smart IoT device for face recognition and temperature detection using thermal images (PI)
  - Pediatric Sepsis Diagnosis Based on Differential Gene Expression and Machine Learning method (PI)
  - A Novel Approach Based on Machine Learning for Revealing Potential Biomarkers to Diagnose Sepsis (PI)
  - Research and Improve Video Streaming Protocol by DASH granted by Naver AI Research (Key member)
  - IoT Smart System for monitoring and alarm for COVID-19 guarantee granted by NAVER AI (Key member)
  - Deep reinforcement learning framework for routing, modulation, and spectrum assignment in Elastic Optical Network (member) – ongoing
  - Deep Learning Based Signal Modulation Identification in ODFM systems (Key member) - ongoing
  - Research and develop a smart system for health monitoring and abnormal detection based on electrocardiogram signal granted by NAVER AI Research (Key member) – ongoing

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PUBLICATIONS

[1] **Duc-Long Vu** and Hai-Chau Le, *"A Novel Approach Based on Machine Learning for Revealing Potential Biomarkers to Diagnose Sepsis"*, expected for publishing at Scientific Report (**On Finishing**)

[2] **Duc-Long Vu** and Hai-Chau Le, *"Efficient Machine Learning-based Gene Selection Exploiting Immune-related Biomarkers and Recursive Feature Elimination for Sepsis Diagnosis"*, 2023 International Symposium on Information and Communication Technology (SoICT) Ho Chi Minh, Vietnam. (**Accepted** - *Top 1 International Conference in Computer Science in Vietnam*)

[3] **Duc-Long Vu** and Hai-Chau Le, *"Machine Learning-based ALS Diagnosis Using Gene Expression Data"*, 2023 RIVF International Conference on Computing and Communication Technologies (RIVF) Hanoi, Vietnam. (**Accepted**)

[4] **Duc-Long Vu** Van Su Pham, Minh Tuan Nguyen, and Hai-Chau Le, *"Pediatric Sepsis Diagnosis Based on Differential Gene Expression and Machine Learning Method"*, 2022 International Conference on Knowledge and Systems Engineering (KSE) Nha Trang, Vietnam, 2022, pp. 1-6, doi: 10.1109/KSE56063.2022.9953619.

[5] **Duc-Long Vu**, Duc-Hieu Nguyen, D. N. Phuong Phi, and Hai-Chau Le, *"Design of an AI-based smart wearable device for visually impaired people"*, Journal of Science and Technology on Information and Communications (JSTIC), 2022.

[6] Linh T. Nguyen, **Duc-Long Vu**, Minh Tuan Nguyen, and Hai-Chau Le, *"Recognition of Human Faces and Temperatures based on automatically intelligent algorithm"*, Journal of Science and Technology on Information and Communications, ISSN 2525-2224, vol.01 (CS.01), pp. 4-9, 2022.

[7] Linh T. Nguyen, **Duc-Long Vu**, Duc Hieu Nguyen, and Hai-Chau Le, *"IoT monitoring system automatically recognizes and measures body temperature using deep learning techniques"*, XXIV National Conference on Electronics, Communication and Information Technology (REV-ECIT 2021), 18-12-2021, Ha Noi, Viet Nam, p.426-431. ISBN: 978-604-80-5958-3.

TEACHING

Assistant Lecturer, Data Engineering Department   Aug 2023 – Current

- Design a syllabus for Big Data short course funded by Samsung R&D Vietnam.
- Design and setup Hands-on Projects for the BigData course.
- Manage class and support students doing mini projects.

AWARDS & SCHOLARSHIPS	▪ **First Prize** in the PTIT Student's Scientific Research Contest	Sep 2021
	▪ **Viettel Digital Talent 2021 scholarship** for students with excellent performance in the VDT program	Oct 2021
	▪ **Honda Award 2021 program** for 100 Vietnamese students with excellent academic performance	Mar 2022
	▪ **Huawei Seeds for The Future scholarship** for 50 talented ICT students in Viet Nam	Sep 2022
	▪ **Third Prize** in the National Student Scientific Research Contest	Sep 2022
	▪ **First Prize** in the PTIT Student's Scientific Research Contest	Sep 2022
	▪ **Merit Award** for students who have outstanding academic results at PTIT	Apr 2023
	▪ **6th DTU International Summer Research School scholarship** for 44 Vietnamese students	Jun 2023
	▪ **Full scholarship for Summer School in Modern Machine Learning** for 40 Vietnamese students	Aug 2023
	▪ **Merit Award** for students who have excellent research results at PTIT	Sep 2023
	▪ **PTIT scholarship** for students with outstanding academic results (2018-2019, 2020-2021, 2021-2022)	

OTHER WORK EXPERIENCE

Data Scientist Intern, PIXTA Vietnam Co.Ltd, Hanoi — Sep 2022 – Oct 2022

- ▪ **Technologies:** PyTorch, Pytorch Lightning, Linux
  - Research and implement some deep learning models such as VGG-16, ResNet-50, ResNet-16, and EfficientNet for multi-class classification problems.
  - Research some state-of-the-art deep learning models such as Slow Fast Network, Retina Net, Style-GAN.

Cloud Engineer Intern, Viettel Network, Hanoi — Apr 2021 – Oct 2021

- ▪ **Technologies:** Kubernetes, Docker, Ansible, Python, Bash, OpenStack, KVM/QEMU, SDN, CI/CD.
  - Research and develop Hot-plug RAM/CPU features in pure KVM and OpenStack to eliminate downtime when adding compute and memory resources to virtual machines
  - Develop a web application to solve the problem of distance between administrators and the system and optimize time in managing and deploying services using Ansible.

LANGUAGES

- ▪ **English**: Professional working proficiency
  - *IELTS*: 6.5 (All band score over 6.0)
  - *TOEIC*: 860 (Reading: 390 - Listening: 470)
- ▪ **Vietnamese**: Mother tongue

TECHNICAL SKILLS

- ▪ **Programming:** Python, R, Matlab, C, Labview
- ▪ **Framework:** Pytorch, Tensorflow, Scikit-learn, Keras
- ▪ **OS:** Ubuntu, CentOS, MacOS, Windows, Raspbian
- ▪ **Platform:** Docker, Kubernetes, OpenStack, VMware, QEMU/KVM
- ▪ **Version control:** Gitlab, Github
- ▪ **Networking:** TCP/IP, Dynamics/Static Routing Technique

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VOLUNTEERING

- ▪ Technology Consultant at Data Technology Club - Telecommunication Faculty I
- ▪ Working as Score Keeper Referee in the VEX IQ National Robotics Championship 2023

REFERENCES

- ▪ **Professor. Tien-Ban Nguyen**
  Dean of Telecommunications Faculty I
  Posts and Telecommunications Institute of Technology
  Office: 10th Floor, A2 Building, Km 10 Nguyen Trai Road., Ha Dong Dist., Hanoi, Vietnam
  Email: bannt@ptit.edu.vn

- ▪ **Professor. Hai-Chau Le**
  Head of Data Engineering Department
  Posts and Telecommunications Institute of Technology
  Office: 10th Floor, A2 Building, Km 10 Nguyen Trai Road., Ha Dong Dist., Hanoi, Vietnam
  Email: chaulh@ptit.edu.vn / lehaichau@ieee.org