DUC-LONG VU

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PERSONAL STATEMENT

I am a highly self-motivated and enthusiastic research assistant with a strong foundation in Telecommunication Technology and Programming. My research interests involved emerging topics combining Telecommunication and Computer Science such as Machine Learning, AI for Healthcare, Bioinformatics, and Cloud Computing.

EDUCATION

Posts and Telecommunications Institute of Technology (PTIT), Hanoi, Vietnam *Sep. 2018 – April. 2023*

- **Bachelor of Engineering** – **Major:** *Electronics and Telecommunications Engineering*
- **GPA**: **3.42/4.0** *(ranked 7/430 - top 2%)***.**
- **Thesis**: "*Research and develop a machine learning model for supporting gene analysis and diagnosis of disease*": Research and develop an effective gene analysis and gene selection procedure, and propose an effective diagnosis algorithm for sepsis prediction based on machine learning algorithms. **(Grade: 10/10)**

LANGUAGE PROFICIENCY

English:
- *TOEIC*: Total Score 860 (Reading: 390 – Listening: 470)
- *IELTS:* Overall 6.5 (All bands score over 6.0)
- English is my daily language for studying and doing research

Vietnamese: Mother tongue

RESEARCH EXPERIENCE

Research Assistant at Data and Intelligent System Laboratory – PTIT SIC *Oct. 2020 - Present*

Advisors: Assoc. Prof. Hai-Chau Le and Dr. Minh-Tuan Nguyen

I have been working on several projects focusing on theoretical research and developing smart devices by applying Artificial Intelligence and IoT technology including:

- 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 based on Deep Learning, open-source IoT platforms, and mini-computer as edge devices. *(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*)
- Deep reinforcement learning framework for routing, modulation, and spectrum assignment in Elastic Optical Network (*Key member*)
- Research and develop a smart system for health monitoring and abnormal detection based on electrocardiogram signal *(Key member)*
- Research and Improve Video Streaming Protocol by DASH granted by Naver AI Research (*Key member*)
- Develop a face recognition and forehead temperature system for detecting fever symptoms based on Machine Learning techniques, edge devices, and IoT platforms granted by NAVER AI Research *(Key member)*.

PUBLICATIONS

1. **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. (**Under review**)
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 Conference on Intelligent Systems and Data Science (ISDS) Can Tho, Vietnam, 2023 (**Accepted**).
3. **Long Duc 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. **[pdf]**
4. **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. **[pdf]**
5. Linh T. Nguyen, **Duc Long Vu**, Minh Tuan Nguyen, 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. **[pdf]**

6. 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. **[pdf]**

WORKING EXPERIENCE

❖ **Data Scientist Intern,** *PIXTA Vietnam Co. Ltd, Ha Noi* *Sep. 2022 – Oct. 2022*

Technologies: PyTorch, Linux server, PyTorch Lightning

- Research YOLO deep learning models for object detection.
- Research and implement to transfer 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, Ha Noi* *April. 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 for eliminating 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.

TECHNICAL SKILLS

- **Programming Language:** Python, R, Matlab, Javascript, C, C++, Labview
- **AI development framework/ Library:** Pytorch/ Pytorch Lightning, Tensorflow, scikit-learn, Keras
- **Operating System**: Raspbian, Ubuntu (Proficient), CentOS, Windows, MacOS
- **Platform**: Docker, Kubernetes, OpenStack
- **Version Control System**: GitLab, GitHub (Proficient)
- **Networking**: TCP/IP, Dynamics/ Static Routing Technique
- **Virtualization**: KVM/QEMU (proficient), VMware.

HONORS AND AWARDS

- **First Prize** in the PTIT Student's Scientific Research Contest *Dec. 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 *Dec. 2022*
- **Third Prize** in the National Student Scientific Research Contest *Dec. 2022*
- **First Prize** in the PTIT Student's Scientific Research Contest *Dec. 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 *June. 2023*
- **Full scholarship for Summer School in Modern Machine Learning** for 40 Vietnamese students *August. 2023*
- **PTIT scholarship** for students with outstanding academic results *(2018-2019, 2020-2021, 2021-2022)*

CERTIFICATIONS AND COURSEWORK

- Deep Learning Specialization/ Coursera, Deep Learning **[Certificate]**
- Huawei Seed for The Future Program **[Certificate]**
- Viettel Digital Talent Program **[Certificate]**
- Certificate of Volunteering at VEX IQ National Championship 2023 **[Certificate]**
- Certificate of Participation 6th International Summer School at Duy Tan University **[Certificate]**

VOLUNTEERING

- Working as Score Keeper Referee in the VEX IQ National Championship 2023 – a National Robotics competition organized between STEAM for Vietnam, the USA Embassy, and Hanoi University of Science and Technology.

REFERENCES

Assoc. Prof. Tien-Ban Nguyen
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