VAN-TUAN TRAN

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RESEARCH INTERESTS

Self-supervised learning, *Representation learning*, *Federated learning*, *AI secure*

RESEARCH EXPERIENCE

Research Assistant **Vietnam**
VinUni-Illinois Smart Health Center *Jan 2022 - Present*
Personalized Privacy-Preserving Federated Learning: The project aims at concurrently protecting the privacy and solving the heterogeneous problems of the users' data in Federated Learning.

- Propose a novel framework providing instance-level privacy-preserving and addressing data heterogeneity in Federated Learning.
- First author of a manuscript being under review at IEEE Transactions on Emerging Topics in Computing.

Research Intern **Vietnam**
Medical Imaging Center - Vingroup Big Data Institute *Oct 2020 - Nov 2021*
Learning from multiple annotators: Improving the detection performance on chest radiographs using multiple expert annotations.

- Co-first author of a paper at IEEE Access.

MRI Pulse Sequence Classification: The project objective is recognizing and classifying brain MRI scans into different pulse sequence types

- Core member of the team, in charge of building DL models and packaging the solution into an open package

Side projects: Time-series Forecasting; Receipt OCR; Multimodal Learning

- Technical leader of a 4-member team, in charge of formulating problems, building ML models, and deploying the solutions into web apps.

WORKING EXPERIENCE

Data Scientist **Vietnam**
AI Lab, MTI Technology Vietnam *Jan 2022 - Present*
AI-Robotics Platform for Remote Hand Palpation: The project's goal is to build a point-of-care hand palpation system funded by Japan's NEDO organization.

- Technical leader of a 3-member team, in charge of analysing data and building DL-based algorithms for 3D hands modeling and keypoints analysis.

Machine Learning Engineer **Vietnam**
CB/I Digital Inc. *Sep 2019 - Oct 2020*
Automated Campaign Management: The project focuses on building a B2B SaaS product helping markerters to automate the budget allocation and keywords bidding tasks in digital marketing campaigns.

- Core member of the team, in charge of analysing data and building time-series forecasters.

Workout Analysis: An advanced feature of a Virtual Mobility Coach solution that applies Pose Estimation techniques for analysing workout poses to avoid bad postures and injuries.

- Core member of the team, in charge of building DL models for skeleton-based pose estimation.

Facial Analysis: an advanced feature that leverages Facial Analysis techniques in eKYC a social platform.

- Technical leader of a team of 3 members, in charge of building face verification and facial attributes analysis algorithms.

Machine Learning Engineer **Vietnam**
CBD Robotics *Sep 2020 - Jan 2021*
Lung Cancer Diagnosis: A DL-based solution for Lung Cancer Diagnosis from CT scans.

- Core member of the team, in charge of building DL models and deploying via REST API with flask.

EDUCATION

BEng. Telecommunications Engineering **Ho Chi Minh City University of Technology (HCMUT), Vietnam**
Bachelor in Engineering *2015 - 2019*
- Thesis project: *Customer Experience Enhancement By Face and Emotion Recognition using Deep Learning*.

PUBLICATIONS

Learning from Multiple Radiology Experts for Enhancing Detection of Abnormalities on Chest Radiography
IEEE Access, First Author *2023*
- Propose an approach to enhance efficiency in abnormal detection tasks by estimating hidden labels from multiple expert annotators and using a re-weighted loss function.

Personalized Privacy-Preserving Framework for Cross-silo Federated Learning
Under review at IEEE Transactions on Emerging Topics in Computing, First Author *2023*
- Propose a novel Federated Learning framework that leverages Meta-learning to learn a global model from DP-guaranteed data and can be efficiently adapted to local, non-iid data.

ACTIVITIES

Teaching Assistant **Vietnam**
BKtel ML and IoT Lab, Ho Chi Minh University of Technology *Fall semester, 2020*
ML Course: Fundamental Machine Learning course for undergrad student.

- Prepare teaching materials.
- Give talks about the applications and recent advances of Deep Learning in Computer Vision and Natural Language Processing.

SKILLS

Languages	Vietnamese (*native*), English (*proficiency*)
Programming Languages	Python, C, MATLAB
Tools	PyTorch, Keras, scikit-learn, git, flask, docker

REFEREES

Assoc. Prof. Ha Hoang Kha
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Ho Chi Minh City University of Technology

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