TUAN-ANH BUI

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Website ◇ Scholar ◇ Github ◇ Linkedin

INTRODUCTION

- A **Researcher**: Strong track record of publishing A/A* papers on cutting-edge and competitive topics, i.e., Trustworthy ML and Generative AI.
- An **Engineer**: Hands-on experience in various ML/AI projects in diverse domains and applications, i.e., Healthcare (sample), Defence (sample), and Fintech.
- An **Educator**: Extensive teaching experience in ML/AI, i.e., compressing expertise and insights into accessible and understandable knowledge.
- A Hard-Working person trying to be more Productive: Often taking responsibility for multiple (above) roles simultaneously.

EDUCATION

Faculty of Information Technology, Monash Universtiy Nov 2019 - Present
PhD student in Computer Science *Australia*

- Research topics: Adversarial Machine Learning, Representation Learning, Generative model.

Hanoi University of Science and Technology 2007 - 2012
B.Sc. in Electronics and Telecommunications (Honour) *Vietnam*

- Thesis title: "Research on optimal trade-off between power saving and QoS".
- Thesis grade: 4/4 (10/10) (Best Thesis Award).
- GPA: 8.44/10 (top 5%, Merit for Excellent Graduate Student).

TEACHING EXPERIENCE

Deep Learning - (Head) Teaching Associate 2020 -
Monash University *Australia*

- Topics: Basic and Advanced Deep Learning, i.e., Optimization, CNNs, RNNs, Tranformers, Generative models.
- Tutoring 400+ students since 2020 including both Master (FIT5215) and Bachelor (FIT3181) students.

Intelligent image and video analysis - Head Teaching Associate 2023 -
Monash University *Australia*

- Topics: Classic Computer Vision (i.e., Edge/Keypoint detection, Morphology, SIFT) and Recent CV Applications (i.e., Object Detection/Segmentaion).
- Tutoring 30+ Master students since 2023 (FIT5221).

Advanced Computer Vision - Lecturer 2022 -
VietAI - An Education Nonprofit Organization in Vietnam *Remote*

- Topics: Deep Generative Models (sample lecture) and Multimodal Learning (sample lecture).
- Tutoring 20+ online students since 2023.

WORKING EXPERIENCE

Trustworthy Machine Learning Project - Joint with Data61 and DST Group 2020 -
Research Assistant *Australia*

· Research Adversarial Attack and Defense methods to make ML models more robust and reliable.

RapidAI - A Healthcare Startup in US 2021 - 2021
Machine Learning Consultant *Remote*

· Developing machine learning model to detect Gaze-Deviation for stroke detection. (sample)

CreditAI Lab, TrustingSocial - A Fintech Startup 2019 - 2020
Research Engineer on Computer Vision *Australia*

· Developing face matching and face recognition algorithm for credit scoring system.

Temasek Lab, Singapore University of Technology and Design (SUTD) 2017 - 2019
Research Engineer on Computer Vision *Singapore*

· Deep model compression, esp. in Recurrent Neural Network (RNN) and Long-Short Term Memory (LSTM), to reducing memory and computational cost, to apply on mobile hardware such as FPGA.
· Improving Generative Adversarial Networks (GANs), esp. in mode collapse problem.
· Implemented module to detect and track Undefined Flying Objects, esp. Drone in Sky Surveillance - Flying Object Detection (SSFOD) project.
· Improved image retrieval module to handle big dataset (appr. 200k images) in Urban-area Scene Based Localization (USBL) project.

Viettel R&D Institute, Viettel Group 2012 - 2017
Digital Signal Processing Engineer *Vietnam*

· Developed baseband processing algorithms: Channel equalization using adaptive filter, Adaptive Noise Cancellation, Digital Pre-Distortion to improve the linearity of radio amplifiers.

SELECTED PUBLICATIONS - GOOGLE SCHOLAR

A. Bui*, Vy Vo*, T. Pham, H. Zhao, D. Phung, T. Le, *"Diverse-Aware Agnostic Ensemble of Sharpness Minimizers"*. Under submission. [paper, code-release soon]

A. Bui, T. Le, H. Zhao, Q. Tran, P. Montague, D. Phung, *"Generating Adversarial Examples with Task Oriented Multi-Objective Optimization"*. Accepted to TMLR 2023. [paper, code]

A. Bui, T. Le, Q. Tran, H. Zhao, D. Phung, *"A Unified Wasserstein Distributional Robustness Framework for Adversarial Training"*. Accepted to ICLR 2022. [paper, code]

A. Bui, T. Le, H. Zhao, P. Montague, S. Camtepe, D. Phung, *"Understanding and Achieving Efficient Robustness with Adversarial Supervised Contrastive Learning"*. Preprint. [paper, code]

T. Le*, **A. Bui***, Tue. Le, H. Zhao, Q. Tran, P. Montague, D. Phung, *"On Global-view Based Defense via Adversarial Attack and Defense Risk Guaranteed Bounds"*. Accepted to AISTATS 2022.

A. Bui, T. Le, H. Zhao, P. Montague, O. de Vel, T. Abraham, D. Phung, *"Improving Ensemble Robustness by Collaboratively Promoting and Demoting Adversarial Robustness"*. Accepted to AAAI 2021. [paper, code]

A. Bui, T. Le, H. Zhao, P. Montague, O. de Vel, T. Abraham, D. Phung, *"Improving Adversarial Robustness by Enforcing Local and Global Compactness"*. Accepted to ECCV 2020. [paper, code]

NT Tran*, **A. Bui***, NM Cheung, *"Improving GAN with neighbors embedding and gradient matching"*. Accepted to AAAI 2019. [paper, code]

NT Tran, **A. Bui**, NM Cheung, *"Dist-gan: An improved gan using distance constraints"*. Accepted to ECCV 2018. [paper, code]

NT Tran, Le Tan, D. K., Doan, A. D., Do, T. T., **A. Bui**, Tan, M., Cheung, N. M. (2018). *On-device scalable image-based localization via prioritized cascade search and fast one-many RANSAC.* IEEE Transactions on Image Processing, 28(4), 1675-1690. paper

HONOURS & AWARDS

2023	DAAD PostdocNetAI Fellowship in Generative Models, Germany.
2022	Top 10% Reviewer at AISTATS 2022.
2019	Faculty of Information Technology's Scholarship, Monash University.
2012-2015	Creative Idea Award for Research and Management at Viettel R&D Institute.
2012	Merit for excellent graduate student, HUST.
2012	Best Thesis Award in Thesis Defence, SET, HUST.
2012	Third prize in Student Conference on Scientific Research, HUST.
2007	Second prize in National Physics Olympiad for High School Students.

REFERENCES

Professor Dinh Phung, Ph.D. (Supervisor)
Falcuty of Information Technology
Monash University

Assistant Professor Trung Le, Ph.D. (Co-Supervisor)
Falcuty of Information Technology
Monash University