Quang-Huy (Percy) Nguyen

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Research Interest

My research focuses on ***meta-learning*** (*zero-shot/few-shot learning*), ***uncertainty estimation*** (*out-of-distribution detection, distribution-shift uncertainty*), and ***domain adaptation*** (*continual learning*, *domain distillation*) for general machine learning and computer vision problems. I am interested in developing machine learning solutions for ***learning with imperfect data*** (e.g., limited, noisy, imbalanced data) with ***minimal human supervision*** (e.g., *semi-supervised learning*), while enabling effective ***extrapolation to unseen domains***. I am also interested in exploring the intersection of ***black-box optimization*** and ***uncertainty estimation*** to advance lifelong and open-world machine learning systems.

Education

- **Ph.D. in Computer Science and Engineering** — 2024 - 2029 *expected*
  College of Engineering, **The Ohio State University**
  - **Research areas**: out-of-distribution detection, domain adaptation, learning with imperfect data
  - **Advisor**: Prof. Wei-Lun (Harry) Chao
- **B.Eng. in Computer Engineering** — 2015 - 2020
  University of Information Technology, Vietnam National University - Ho Chi Minh city

Research Experience

- **Graduate Research Assistant** – **CSE, The Ohio State University** — August 2024 - Now
  Advised by: Prof. Wei-Lun (Harry) Chao — Columbus, Ohio, USA
  - Multi-instance learning for Medical Imaging; Semi-supervised learning for Vision Foundation Models
- **AI Research Resident - FPT Software AI Residency Program** — August 2023 - July 2024
  Advised by: Prof. Dung D. Le — Ho Chi Minh City, Vietnam
  - Zero-shot Out-of-distribution Object Detection with off-the-shelf text-to-image Diffusion Model
- **Research Assistant - CECS, VinUniversity** — November 2022 - July 2023
  Advised by: Prof. Dung D. Le — Ha Noi, Vietnam
  - Multi-objective Optimization with Bayesian Optimization and Gaussian Process
- **Research Assistant -VinUni-Illinois Smart Health Center, VinUniversity** — January 2022 - June 2022
  Advised by: Profs. Dung D. Le and Hieu H. Pham — Ha Noi, Vietnam
  - Few-shot learning for medical imaging with Cosine Transformer

Selected Preprints and Publications

[1] Ping Zhang*, Zheda Mai*, **Quang-Huy Nguyen**, and Wei-Lun Chao. Revisiting semi-supervised learning in the era of foundation models. *preprint*, 2025.

[2] Zheda Mai, Ping Zhang, Cheng-Hao Tu, Hong-You Chen, **Quang-Huy Nguyen**, Li Zhang, and Wei-Lun Chao. Lessons learned from a unifying empirical study of parameter-efficient transfer learning (PETTL) in visual recognition. *CVPR*, 2025 (**highlight, 2.98%**).

[3] **Quang-Huy Nguyen***, Jin Zhou*, Zhenzhen Liu*, Khanh-Huyen Bui, Kilian Q. Weinberger, Wei-Lun Chao, and Dung D. Le. Detecting Out-of-Distribution Objects through Class-Conditioned Inpainting. *preprint*, 2025.

[4] Minh-Duc Nguyen, Phuong M. Dinh, **Quang-Huy Nguyen**, Long P. Hoang, and Dung D. Le. Improving Pareto Set Learning for Expensive Multi-objective Optimization via Stein Variational Hypernetworks. *AAAI*, 2025.

[5] **Quang-Huy Nguyen***, Long P. Hoang*, Hoang V. Vu, and Dung D. Le. Controllable Expensive Multi-objective Learning with Warm-starting Bayesian Optimization. *preprint*, 2024.

[6] **Quang-Huy Nguyen**, Cuong Q. Nguyen, Dung D. Le, and Hieu H. Pham. Enhancing Few-shot Image Classification with Cosine Transformer. *IEEE Access*, 2023.