Quang-Huy (Percy) Nguyen

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Research Interest

I am interested in ***meta-learning***, ***uncertainty estimation***, and ***domain adaptation*** for machine learning and computer vision. In particular, my research focuses on ***learning with imperfect data*** (e.g., limited, noisy, or imbalanced) under ***minimal human supervision***, while enabling effective ***extrapolation and adaptation to unseen domains*** beyond the training set. Application-wise, I am working on ***medical imaging*** and ***animal behavior analysis***, where handling limited data with minimal supervision is vital.

Education

- **Ph.D. in Computer Science and Engineering** 2024 - Now
  College of Engineering, **The Ohio State University**
  - **Research areas**: medical imaging, animal behavior prediction, out-of-distribution detection
  - **Advisor**: Prof. Wei-Lun (Harry) Chao
- **B.Eng. in Computer Engineering** 2015 - 2020
  University of Information Technology, Vietnam National University - Ho Chi Minh city

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

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 and Parameter-efficient fine-tuning for VLMs
  - Out-of-distribution object detection
- **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 with generative models
- **Research Assistant - CECS, VinUniversity** November 2022 - July 2023
  Advised by: Prof. Dung D. Le Ha Noi, Vietnam
  - Multi-objective Black-box Optimization with 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 with Transformer and Cosine-based Attention mechanism

Research and Technical Skills

- **Research Domains**: Machine Learning, Computer Vision
- **Research Interests**: Out-of-Distribution Detection, Uncertainty Estimation, Black-box Optimization
- **Programming Languages**: Python (primary)
- **Frameworks & Technologies**: PyTorch, TensorFlow, OpenCV, WandB, Bash, Git, Vim, LaTeX
- **Machine Learning Tools**: NumPy, Pandas, SciPy, scikit-learn, Matplotlib, Einops, PyMOO