Dang **Nguyen**

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Research interests

My researches are centered on developing efficient and robust machine-learning algorithms for large-scale datasets and architectures. Specifically, I am focused on improving the training efficiency of large language models and enhancing their robustness. Additionally, I am interested in exploring Generative AI and Multimodal Learning, with a particular emphasis on improving data quality. Through my work, I aim to advance the capabilities of machine learning systems in handling complex and diverse data while ensuring their reliability and performance.

Education

University of California, Los Angeles
California, USA

Ph.D. in Computer Science — *Sep. 2023 - Present*

- Advised by Professor Baharan Mirzasoleiman
- UCLA Graduate Dean's Scholar Award

Toyo University
Tokyo, Japan

B.S. in Information Networking for Innovation and Design — *Apr. 2017 - Mar. 2021*

- Toyo Top Global Scholarship A
- GPA: 4.27/4.3, Top 1/300 in the faculty

Experience

Cisco
California, USA

PhD Research Intern — *Jun. 2024 - Sep. 2024*

- Advisor: Dr. Ali Payani

VinAI
Hanoi, Vietnam

AI Resident — *Oct. 2020 - Aug. 2023*

- Main research topics: Optimal Transport and Model Fusion
- Advisor: Professor Nhat Ho (UT Austin)
- Participated in an applied project which aims to improve the performance of object detectors in low-light conditions.
- Managed GPU resources for the VinAI Residency Program.

FPT Japan Holdings
Yokohama, Japan

Part-time Machine Learning Engineer — *Oct. 2019 - Sep. 2020*

- Participated in a long-term demand forecasting project for a chain pharmacy company in Japan.

Publications

(*) denotes equal contribution

1. Y. Xue, J. Siddharth, **D. Nguyen**, and B. Mirzasoleiman, "Understanding the Robustness of Multi-modal Contrastive Learning to Distribution Shift", *International Conference on Learning Representations (ICLR)*, 2024.
2. K. Nguyen*, **D. Nguyen***, N. Ho, "Self-Attention Amortized Distributional Projection Optimization for Sliced Wasserstein Point-Cloud Reconstruction", *International Conference on Machine Learning (ICML)*, 2023.
3. **D. Nguyen**, T. Nguyen, K. Nguyen, D. Phung, H. Bui, and N. Ho, "On cross-layer alignment for model fusion of heterogeneous neural networks", *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2023.
4. K. Nguyen*, **D. Nguyen***, T. A. V. Le, T. Pham, and N. Ho, "Improving mini-batch optimal transport via partial transportation", *International Conference on Machine Learning (ICML)*, 2022.
5. K. Nguyen, **D. Nguyen**, Q. Nguyen, T. Pham, H. Bui, D. Phung, T. Le, and N. Ho, "On transportation of mini-batches: A hierarchical approach", *International Conference on Machine Learning (ICML)*, 2022.

Preprints

1. **D. Nguyen**, P. Haddad, E. Gan, and B. Mirzasoleiman. Make the Most of Your Data: Changing the Training Data Distribution to Improve In-distribution Generalization Performance.
2. **D. Nguyen**, W. Yang, Y. Yang, R. Anand and B. Mirzasoleiman. Memory-efficient Training of LLMs with Larger Mini-batches.

Professional services

- Program Committee at New Frontiers in AdvML@NeurIPS2024
- Reviewer at Conference on Neural Information Processing Systems (NeurIPS) 2022-2024 (Top reviewer)
- Reviewer at the International Conference on Artificial Intelligence and Statistics (AISTATS) 2023-2024
- Reviewer at the International Conference on Machine Learning (ICML) 2023-2024
- Reviewer at the International Conference on Learning Representations (ICLR) 2024
- Program Committee at AAAI 2025

Honors & Awards

International

2023 **UCLA Graduate Dean's Scholar Award**, UCLA — *California, USA*
2017 **Toyo Top Global Scholarship A**, Toyo University — *Tokyo, Japan*
2015 **Silver medal**, 56th International Mathematical Olympiad — *Chiang Mai, Thailand*

Domestic

2015 **First Prize**, Vietnam Mathematical Olympiad — *Hanoi, Vietnam*
2014 **Second Prize**, Vietnam Mathematical Olympiad — *Hanoi, Vietnam*

Extracurricular Activities

AI Day 2022 — *Hanoi, Vietnam*
Poster presenter · Panel speaker — *Aug. 2022*

FPT Young Talents — *Hanoi, Vietnam*
Member — *2015 - 2017*

Technical skills

DevOps Linux, Docker
Programming Python, C/C++, MATLAB
Libraries Pytorch, TensorFlow, NumPy, etc.

Languages

English IELTS Overall 7.5: L 8, R 8, W 7.5, S 6.5
Japanese JLPT N2
Vietnamese Native