

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

Ph.D. in Computer Science

California, USA

Sep. 2023 - Present

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

Toyo University

B.S. in Information Networking for Innovation and Design

Tokyo, Japan

Apr. 2017 - Mar. 2021

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

Experience

Google Research

Student Researcher

California, USA

Sep. 2024 - Dec. 2024

Cisco

PhD Research Intern

California, USA

Jun. 2024 - Sep. 2024

- Advisor: Dr. Ali Payani
- Topic: LLM Hallucination

VinAI

AI Resident

Hanoi, Vietnam

Oct. 2020 - Aug. 2023

- Advisor: Professor Nhat Ho (UT Austin)
- Topics: Optimal Transport and Model Fusion
- 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

Part-time Machine Learning Engineer

Yokohama, Japan

Oct. 2019 - Sep. 2020

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

Publications

(*) denotes equal contribution

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. *Advances in Neural Information Processing Systems (NeurIPS)*, 2024.
2. 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.
3. 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.
4. **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.
5. 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.
6. 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**, W. Yang, R. Anand, Y. Yang and B. Mirzasoleiman. Mini-batch Coresets for Memory-efficient Training of Large Language Models. 2024.

Professional services

- 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) 2024-2025
- Program Committee at New Frontiers in AdvML@NeurIPS2024
- Program Committee at AAAI 2025

Honors & Awards

INTERNATIONAL

- 2023 **UCLA Graduate Dean's Scholar Award**, UCLA
2017 **Toyo Top Global Scholarship A**, Toyo University
2015 **Silver medal**, 56th International Mathematical Olympiad

California, USA
Tokyo, Japan
Chiang Mai, Thailand

DOMESTIC

- 2015 **First Prize**, Vietnam Mathematical Olympiad
2014 **Second Prize**, Vietnam Mathematical Olympiad

Hanoi, Vietnam
Hanoi, Vietnam