

OVERVIEW

I am a second-year Ph.D. student in Statistics at The University of Texas at Austin. My research focus has primarily been on probabilistic models and optimal transport.

EDUCATION

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| The University of Texas at Austin | Texas, USA |
| Ph.D. in Statistics at Department of Statistics and Data Sciences | 2021–Present |
| <ul style="list-style-type: none">– Expected graduation date: June, 2026.– GPA: 3.97/4.0.– Advisors: Professor Nhat Ho. | |
| Hanoi University of Science and Technology (HUST) | Hanoi, Vietnam |
| B.Sc in Computer Science (5 years program) | 2015–2020 |
| <ul style="list-style-type: none">– GPA: 3.61/4.00, Major GPA: 3.71/4.00, Top: 1%, graduated with Excellent Degree.– Thesis: “Distributional Sliced-Wasserstein and Applications to Generative Modeling”. | |

EMPLOYMENT

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| The Univeristy of Texas at Austin | Texas, USA |
| <i>Graduate Research Assistant</i> | September, 2022 –Present |
| <ul style="list-style-type: none">– Research topics: Random projections for probability measures, Large-scale optimal transport in Machine Learning. | |
| AT&T Labs | Texas, USA |
| <i>Research Intern</i> | June, 2022 –August, 2022 |
| <ul style="list-style-type: none">– Research topics: User Browsing Behavior Analysis, Co-clustering.– Proposed and implemented co-clustering algorithms to analyze user browsing behavior in PySpark on DataBricks. | |
| VinAI Research | Hanoi, Vietnam |
| <i>AI Research Resident</i> | 2019 –2021 |
| <ul style="list-style-type: none">– Research topics: Deep Generative Models, Optimal Transport.– Advisor: Dr. Hung Bui (Director of VinAI Research).– Did research on Deep Generative Models (VAEs, GANs, score matching, diffusion models) and improved them with Optimal Transport (sliced Wasserstein distance, Sinkhorn divergence). | |
| Data Science Laboratory (HUST) | Hanoi, Vietnam |
| <i>Undergraduate Research Student</i> | 2018–2020 |
| <ul style="list-style-type: none">– Research topics: Probabilistic Graphical Model, Continual Learning.– Applied continual learning (online learning) techniques to variational inference, maximum likelihood estimators, and so on. | |

PUBLICATIONS

(*) denotes equal contribution

1. **K. Nguyen**, T. Ren, H. Nguyen, L. Rout, T. Nguyen, and N. Ho, “Hierarchical sliced Wasserstein distance”, *International Conference on Learning Representations*, 2023.
2. **K. Nguyen** and N. Ho, “Revisiting sliced Wasserstein on images: From vectorization to convolution”, *Advances in Neural Information Processing Systems*, 2022.
3. **K. Nguyen** and N. Ho, “Amortized projection optimization for sliced Wasserstein generative models”, *Advances in Neural Information Processing Systems*, 2022.
4. T. Nguyen, M. Pham, T. Nguyen, **K. Nguyen**, S. J. Osher, and N. Ho, “Transformer with Fourier integral attentions”, *Advances in Neural Information Processing Systems*, 2022.
5. T. Nguyen, T. Nguyen, H. Do, **K. Nguyen**, V. Saragadam, M. Pham, K. Nguyen, N. Ho, and S. J. Osher, “Improving transformer with an admixture of attention heads”, *Advances in Neural Information Processing Systems*, 2022.
6. **K. Nguyen***, D. Nguyen*, T. Pham, and N. Ho, “Improving mini-batch optimal transport via partial transportation”, in *Proceedings of the 39th International Conference on Machine Learning*, 2022.
7. **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”, in *Proceedings of the 39th International Conference on Machine Learning*, 2022.
8. K. Le, H. Nguyen, **K. Nguyen**, T. Pham, and N. Ho, “On multimarginal partial optimal transport: Equivalent forms and computational complexity”, in *International Conference on Artificial Intelligence and Statistics*, PMLR, 2022, pp. 4397–4413.
9. S. Nguyen, D. Nguyen, **K. Nguyen**, K. Than, H. Bui, and N. Ho, “Structured dropout variational inference for bayesian neural networks”, *Advances in Neural Information Processing Systems*, vol. 34, pp. 15 188–15 202, 2021.
10. **K. Nguyen**, N. Ho, T. Pham, and H. Bui, “Distributional sliced-Wasserstein and applications to generative modeling”, in *International Conference on Learning Representations*, 2021.
11. **K. Nguyen**, S. Nguyen, N. Ho, T. Pham, and H. Bui, “Improving relational regularized autoencoders with spherical sliced fused Gromov-Wasserstein”, in *International Conference on Learning Representations*, 2021.

SUBMISSIONS

(*) denotes equal contribution

1. **K. Nguyen**, T. Ren, and N. Ho, “Markovian sliced Wasserstein distances: Beyond independent projections”, *arXiv preprint arXiv:2301.03749*, 2023.
2. **K. Nguyen***, D. Nguyen*, and N. Ho, “Self-attention amortized distributional projection optimization for sliced Wasserstein point-clouds reconstruction”, *arXiv preprint arXiv:2301.04791*, 2023.
3. D. Le*, H. Nguyen*, **K. Nguyen***, T. Nguyen, and N. Ho, “Fast approximation of the generalized sliced-Wasserstein distance”, *arXiv preprint arXiv:2210.10268*, 2022.

4. X. Han, T. Ren, T. M. Nguyen, **K. Nguyen**, J. Ghosh, and N. Ho, “Robustify Transformers with robust kernel density estimation”, *arXiv preprint arXiv:2210.05794*, 2022.
5. D. Nguyen, **K. Nguyen**, D. Phung, H. Bui, and N. Ho, “Model fusion of heterogeneous neural networks via cross-layer alignment”, *arXiv preprint arXiv:2110.15538*, 2021.
6. N. Ho, D. Do, H. Nguyen, and **K. Nguyen**, “Optimal rate for parameter estimation in matrix-variate deviated models”, *arXiv preprint arXiv:2301.11808*, 2023.
7. H. Nguyen, **K. Nguyen**, and N. Ho, “On parameter estimation in deviated gaussian mixture of experts”, *Under Review*, 2023.

PROFESSIONAL SERVICES

- Reviewer at Journal of Machine Learning Research (JMLR).
- Reviewer at Machine Learning Journal.
- Reviewer at International Conference on Machine Learning (ICML) 2021, 2022, 2023.
- Reviewer at Conference on Neural Information Processing Systems (NeurIPS) 2021, 2022 (top reviewer).
- Reviewer at Workshop on Deep Generative Models (NeurIPS) 2021.
- Reviewer at International Conference on Learning Representations (ICLR) 2022, 2023.
- Reviewer at International Conference on Artificial Intelligence and Statistics (AISTATS) 2022, 2023.
- Reviewer at AAAI Conference on Artificial Intelligence (AAAI) 2023.
- Reviewer at IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR) 2023.
- Reviewer at International Conference on Computer Vision (ICCV) 2023.

AWARDS

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| • NeurIPS 2022 Scholar Award (about 2,000\$). | 2022 |
| • ICML Participation Grants (about 2,000\$). | 2022 |
| • Doctoral Fellowship of The University of Texas at Austin (about 30,000\$). | 2021 |
| • Third Prize of Scientific Research Student Award of Hanoi University of Science and Technology. | 2019 |

TECHNICAL SKILLS

- **Python:** Proficient.
Libraries: Pytorch (proficient), Tensorflow (basic), Scikit-Learn (proficient), Numpy (proficient), Pandas (basic), Matplotlib (proficient), Pyspark (basic), and so on.
- **Java:** Basic.
- **C/C++:** Basic.
- **Developer Tools:** Git.
- **Systems:** Linux.