Huy Minh Nguyen

Last update: May 15, 2022

CONTACT INFORMATION

`Phone:` (+84) 972 995 465
`Email:` minhhuy081199@gmail.com
`Homepage:` https://huynm99.github.io/

EDUCATION

Ho Chi Minh University of Science, Ho Chi Minh City, Vietnam. 2017–2020
Bachelor of Science in Mathematics and Computer Science, Honor Program.

- Major: Probability and Statistics.
- Supervisor: Professor Dang Duc Trong.
- GPA: **9.75/10.0** (≈ **3.93/4.0**), Graduated 1 year earlier with highest distinction.
- Rank: **1/3500** - *Valedictorian.*

RESEARCH EXPERIENCE

VinAI Research, Hanoi, Vietnam. 2020–Present
AI Research Resident.

- Research topics: Optimal Transport theory and its applications in Domain Adaptation.
- Skill gained: Providing theoretical proofs for the complexity analysis of Optimal Transport algorithms (Sinkhorn algorithm and its variants, Barycenter computation, etc). Applying Optimal Transport in studying many problems in Domain Adaptation (Label Shift, Data Shift).

RESEARCH INTERESTS

My current research focuses mainly on Optimal Transport theory, in which I utilize various techniques to lower the computational complexity of Optimal Transport algorithms. Additionally, I am also interested in developing a theoretical understanding of Wasserstein distance and its variants between common distributions, particularly Gaussians. On the application side, I have recently used Optimal Transport to study the label shift and data shift problems in Domain Adaptation.

PUBLICATIONS

- **Huy Nguyen***, Khang Le*, Dung Le*, Dat Do, Tung Pham, Nhat Ho. Entropic Gromov-Wasserstein between Gaussian Distributions.
  - *39th International Conference on Machine Learning (ICML 2022).*
- **Huy Nguyen***, Khang Le*, Khai Nguyen, Tung Pham, Nhat Ho. On Multimarginal Partial Optimal Transport: Equivalent Forms and Computational Complexity.
  - *25th International Conference on Artificial Intelligence and Statistics (AISTATS 2022).*
- **Huy Nguyen***, Khang Le*, Quang Minh Nguyen, Tung Pham, Hung Bui, Nhat Ho. On Robust Optimal Transport: Computational Complexity and Barycenter Computation.
  - *35th Conference on Neural Information Processing Systems (NeurIPS 2021).*
- Thu Nguyen, Duy H. M. Nguyen, **Huy Nguyen**, Binh T. Nguyen, Bruce A. Wade. EPEM: Efficient Parameter Estimation for Multiple Class Monotone Missing Data.
  - *Information Sciences Journal (Impact Factor: 6.795), Volume 567, page 1-22.*

PREPRINTS

- Trung Le, Dat Do, Tuan Nguyen, **Huy Nguyen**, Hung Bui, Nhat Ho, Dinh Phung. On Label Shift in Domain Adaptation via Wasserstein Distance. *Under review, arXiv:2110.15520.*

PROFESSIONAL SERVICES

- **Reviewer** at AISTATS 2022, ICML 2022.

Honors and Awards

- Class of 2020 **Valedictorian** of Ho Chi Minh University of Science (HCMUS). 2020
  - Graduated 1 year earlier with the highest GPA ever in HCMUS, at 9.75/10.0.
- **Merit Scholarship** for gifted students in Mathematics. 2018, 2019
  - Granted by Vietnam Institute for Advanced Study in Mathematics (VIASM).
- **Gold medal** in Algebra, Vietnam Mathematics Olympiad for undergraduate students. 2019
  - Organized by Vietnam Mathematical Society (VMS).
- **Bronze medal** in Analysis, Vietnam Mathematics Olympiad for undergraduate students. 2019
  - Organized by Vietnam Mathematical Society (VMS).
- Undergraduate students with **Five Merits**, National Level. 2019
  - Morality, Knowledge, Physical Health, Social Skills, and Integration Competence.
- **Full Scholarship** of Ho Chi Minh University of Science. 2017
  - Only for a student having the highest score in the university entrance examination.

Other Activities

- **Maths Mentor** at the Projects in Mathematics and Applications (PiMA) Summer Camp. 2019
  - Giving lectures on Calculus for high school students and instructing them to do research about Gradient Descent method and its variants.
- **Students** at the Summer School on Mathematics, Vietnam Institute for Advanced Study in Mathematics (VIASM). 2019
  - Participating in two courses: Differential Geometry and Mathematical Models in Economy.
- **Maths Mentor** at the Etest Science Camp. 2018
  - Giving lectures on Linear and Abstract Algebra for high school students and instructing them to carry out research about tiling problems.

Technical Skills

- *System*: Windows, Linux.
- *Programming Languages*: Python, MATLAB, R.
- *Softwares*: LaTeX, Microsoft Offices.

Languages

- **Vietnamese**: Native.
- **English**: Proficient (IELTS Overall 7.0: Reading 8.0, Listening 8.0, Writing 6.5, Speaking 6.0).