Ngoc Ngo Quang Tran

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Education

Vanderbilt University — Nashville, TN
Ph.D. Student in Computer Science — *Expected May 2028*
Advisor: Dr. Kevin Leach

Rensselaer Polytechnic Institute — Troy, NY
Master of Science in Computer Science — *May 2021*
Advisor: Dr. Alex Gittens

Wabash College — Crawfordsville, IN
Bachelor of Arts with Distinction in Mathematics — *May 2017*
Summa Cum Laude, Phi Beta Kappa

Experience

Vanderbilt University — Nashville, TN
Graduate Teaching Assistant — *August 2023 – Present*

- Explained difficult concepts and guided through unsolved problems during office hours and on online forums.
- Graded assignments, projects, and exams with detailed feedback.

VinAI Research — Hanoi, Vietnam
Research Resident — *August 2021 – July 2023*

- Conducted and published state-of-the-art research in top-tier venues in Machine Learning.
- Developed internal projects for smart homes and autonomous vehicles.
- Shared experiences and knowledge as the speaker at various AI-centric events.
- Presented and participated in weekly meetings of the Machine Learning reading group.

Sun Asterisk Inc. — Hanoi, Vietnam
AI Research Team Lead — *June 2019 – August 2021*

- Managed research progress and publish at AI conferences, organized and participated in internal knowledge sharing seminars, designed team OKRs, supported other product teams. Lead a team of 10.
- Directed and spearheaded the development of the internal chatbot *Stabo*, defined project specification and development plan, implemented the MVP, managed ongoing development and support. Lead a team of 5.
- Taught the *Machine Learning Fundamentals* course, designed the course structure, crafted teaching materials.
- Presented talks as guest lecturer at prestigious universities and speaker at high-profile venues.

Rensselaer Polytechnic Institute — Troy, NY
Graduate Teaching & Learning Assistant — *August 2017 – May 2019*

- Taught lab sessions, the practical portion of Computer Science courses.
- Explained difficult concepts and guided through unsolved problems during office hours and on online forums.
- Held review sessions going through all quizzed concepts and the mock test, conducted Q&As before every exams.
- Graded assignments, projects, and exams with detailed feedback.

Graduate Research Assistant — *June 2018 - August 2018*

- Surveyed and reviewed existing literature on matrix completion from limited observations.
- Worked on matrix sketching conditions and proved estimation bounds, under the supervision of Dr. Alex Gittens.

Coe College — Cedar Rapids, IA
Undergraduate Research Assistant — *May 2016 – August 2016*

- Analyzed the properties of ABC Endview puzzles and the effect of the puzzle's starting state on the solution's existence, and uniqueness, and optimality under the supervision of Dr. Jonathan White.
- Discovered a Fibonacci-like pattern in the minimum clue set requirement for inducing a unique valid solution.

Wabash College Crawfordsville, IN

IT Helpdesk Intern *August 2015 – May 2016*

- Managed the software installation and maintenance of Wabash College's facility.
- Troubleshot and resolved technical problems from faculties and students.

FPT Software Hanoi, Vietnam

Junior Dev Intern *June 2014 – August 2014*

- Developed and compared clustering algorithms as part of the outsourced DIRECTV project.
- Prepared for the OCJP test, a mandatory requirement for the employees, as a Java Trainee.

Research *Asterisk (*) denotes equal contributions.*

- **Ngoc N. Tran***, Lam Tran*, Hoang Phan, Anh Bui, Tung Pham, Toan Tran, Dinh Phung and Trung Le. "Robust Contrastive Learning With Theory Guarantee." *Under review.*
- **Ngoc N. Tran**, Son Duong, Hoang Phan, Tung Pham, Dinh Phung and Trung Le. "Sharpness & Shift-Aware Self-Supervised Learning." *Under review.*
- Hoang Phan, Lam Tran, **Ngoc N. Tran**, Nhat Ho, Dinh Phung and Trung Le. "Improving Multi-task Learning via Seeking Task-based Flat Regions." *Under review.*
- **Ngoc N. Tran**, Anh Bui, Dinh Phung and Trung Le. "Multiple Perturbation Attack: Attack Pixelwise Under Mixed ℓ_p-norms For Better Adversarial Performance." *Under review.*
- Thanh Van Le*, Hao Phung*, Thuan Hoang Nguyen*, Quan Dao*, **Ngoc N. Tran** and Anh Tran. "Anti-DreamBooth: Protecting Users From Personalized Text-to-Image Synthesis." In *Proceedings of the IEEE/CVF International Conference on Computer Vision*, 2023.
- Hoang Phan, **Ngoc N. Tran**, Trung Le, Toan Tran, Nhat Ho and Dinh Phung. "Stochastic Multiple Target Sampling Gradient Descent." In *Advances in Neural Information Processing Systems 35*, 2022.
- Hoang Viet Trinh, Tung Tien Bui, Tam Minh Nguyen, Huy Quang Dao, Quang Huu Pham, **Ngoc N. Tran** and Ta Minh Thanh. "ReINTEL Challenge 2020: A Comparative Study of Hybrid Deep Neural Network for Reliable Intelligence Identification on Vietnamese SNSs." In *Proceedings of the 7th International Workshop on Vietnamese Language and Speech Processing*, 2021.
- Toan Pham Van, **Ngoc N. Tran**, Hoang Pham Minh, Tam Minh Nguyen and Thanh Ta Minh. "Efficient Low-Latency Dynamic Licensing for Deep Neural Network Deployment on Edge Devices." In *Proceedings of the 2020 3rd International Conference on Computational Intelligence and Intelligent Systems*, 2020.
- Quang Huu Pham, Viet Anh Nguyen, Linh Bao Doan, **Ngoc N. Tran** and Thanh Ta Minh. "From Universal Language Model to Downstream Task: Improving RoBERTa-Based Vietnamese Hate Speech Detection." In *2020 12th International Conference on Knowledge and Systems Engineering (KSE)*, 2020. *Best Paper Award.*
- Toan Pham Van, Tam Minh Nguyen, **Ngoc N. Tran**, Hoai Viet Nguyen, Linh Bao Doan, Huy Quang Dao and Thanh Ta Minh. "Interpreting the Latent Space of Generative Adversarial Networks using Supervised Learning." In *2020 International Conference on Advanced Computing and Applications (ACOMP)*, 2020.
- Toan Pham Van, Son Trung Nguyen, Linh Bao Doan, **Ngoc N. Tran** and Ta Minh Thanh. "Efficient Palm-Line Segmentation with U-Net Context Fusion Module." In *2020 International Conference on Advanced Computing and Applications (ACOMP)*, 2020.
- Toan Pham Van, **Ngoc N. Tran** and Ta Minh Thanh. "Deep Learning Approach for Singer Voice Classification of Vietnamese Popular Music." In *Proceedings of the Tenth International Symposium on Information and Communication Technology*, 2019.
- Quang Pham Huu, Thoi Hoang Dinh, **Ngoc N. Tran**, Toan Pham Van and Thanh Ta Minh. "Deep Neural Networks Based Invisible Steganography for Audio-into-Image Algorithm." In *2019 IEEE 8th Global Conference on Consumer Electronics (GCCE)*, 2019.

Honors & Awards

Vietnamese Natural Language Processing Competition — Hanoi, Vietnam
Fourth Place – Reliable Intelligence Identification on Vietnamese SNSs — *2020*

Indiana Collegiate Mathematics Competition — Indiana, United States
Second Place — *2017*

William Lowell Putnam Mathematical Competition — United States
Individual Score: 11 — *2013*

Vietnam Mathematical Olympiad, Provincial Round — Hanoi, Vietnam
Second Prize – High School Division — *2013*
Honorary Prize – High School Division — *2012*
Third Prize – Middle School Division — *2009*

American/International Regions Mathematics League — Las Vegas, United States
Highest Team Scorer – Vietnam Team — *2012*

Indonesia International Mathematics Competition — Bali, Indonesia
Silver Medal – Individual Competition — *2011*
Second Runner-Up – Group Prize — *2011*
Second Runner-Up – Team Competition — *2011*

Odon Vallet Scholarship — Hanoi, Vietnam
High School Division — *2011*

Hanoi Open Mathematics Olympiad — Hanoi, Vietnam
First Prize – Middle School Division — *2011*

International Junior Science Olympiad — Baku, Azerbaijan
Bronze Medal – Individual Competition — *2009*

Skills

Programming Languages: Python, C/C++, Go, Haskell, Java, Scala, Prolog, Racket/Scheme, Matlab
Libraries/Modules: PyTorch, JAX, Keras, TensorFlow, NumPy/SciPy, pandas, matplotlib, seaborn, cvxpy
Language Proficiency: English (fluent), Vietnamese (native), German (elementary)

References

Dr. Kevin Leach *kevin.leach@vanderbilt.edu*
Advisor while attending Vanderbilt University as a Ph.D. Student.

Dr. Trung Le *trunglm@monash.edu*
Research Mentor while working at VinAI Research as a Research Resident.