Quoc-Anh Hoang Nguyen

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EDUCATION & ACHIEVEMENTS

❖ **Mathematics Institute, Vietnam Academy of Science and Technology** 11/2022-Present
Major: Applied Mathematics
Degree: Master of Science *(Pending, expected graduation in 03/2025)*
CPA: 3.69/4.00
Thesis: Learning Dynamical Systems with Neural Networks *(Score 9/10 excellent).*
Advisor: Dr. Duc Hoang Luu – Max-Planck-Institute for Mathematics in the Sciences, Germany

❖ **Hanoi University of Science and Technology** 08/2018-10/2022
Major: Applied Mathematics and Information
Degree: Bachelor
CPA: 3.64/4.00 (*Top 2 of Faculty*)
Thesis: Building kernel function and using Trust-region method for Bayesian Optimization in Mixed Search Spaces *(Score: 10/10).*
Advisor: Prof. Nguyen Thi Ngoc Anh – Hanoi University of Science and Technology, Vietnam

❖ **Academic awards**

- Top 15 outstanding graduate students rewarded by Principal of Hanoi University of Science and Technology, 2022
- 1^{st} prize, Hanoi University of Science and Technology Scientific Research Undergraduate Conference, 2021
- 3^{rd} prize, Olympic Econometrics and Applications, 2021
- Silver Honour, International Youth Math Challenge, 2021
- Top 10 Hanoi mathematical team members, Vietnam Mathematical Olympiad, 2018
- 3^{rd} prize, International Mathematics Tournament of Towns, 2015

EXPERIENCES

❖ **Mathematics Institute, Vietnam Academy of Science and Technology** 12/2021-11/2024
Researcher

- Researched about Stochastic Gradient Descent under the "Scientific Research Guide for prospective undergraduate" program.
- Researched about NeuralODE for learning chaotic dynamical systems.
- Researched about Stochastic Differential Equation and score-based Generative models.

❖ **FPT Software AI Residency** 12/2021-06/2024
AI researcher

- Researched about Bayesian Optimization, Transfer learning, Variational AutoEncoder, and High-dimensional problem.
- Submitted 3 research papers to top-tier AI/ML conferences/journals.
- Got 2 research papers accepted at A/A* AI/ML conferences.

❖ **Vietnam Electricity Group (EVN) × Hanoi University of Science and Technology** 10/2020-01/2021
AI researcher

- Improved the performance of electricity load prediction accuracy up to 50% from the previous rate 40%.
- Composed research paper "Feature selection using genetic algorithm and Bayesian hyper-parameter optimization for LSTM in short-term load forecasting".

PROJECTS

❖ **Davies Insight Engine** 01/2025-07/2025
- Developed LLM model for sentiment analysis task.
- Applied In-Context Learning techniques to improve prompt effectiveness.

❖ **Renesas - Complier Optimization** 06/2024-12/2024
- Researched about compiler pass orders for program efficiency.
- Developed a model-based Reinforcement Learning model for predicting optimal passes.

❖ **Travel Assistant** 10/2023
- Built a LLM-based travel planning app to organize trips.
- Participated and achieved a second prizes in Hanoi LLM Hackathon 2023.

❖ **Portfolio management in Vietnam's stock market** 11/2020-06/2021
- Conducted research for portfolio management using Deep Reinforcement Learning.
- Developed a deep reinforcement learning model for Vietnam's stock market.
- Achieved a consolation prizes in Olympic Econometrics and Applications 2021.

SCHOLARSHIPS

- VinIF Master's and Doctoral Scholarships Program for graduate students, 2022
- Vietnam Institute for Advanced Study in Mathematics scholarship, 2020
- Corporation Computer-Communication-Control 3C.INC scholarship, 2020
- Hanoi University of Science and Technology scholarship, 2020
- The National Institute of Information Technology Corporate scholarship, 2019

TALKS & CONFERENCE PRESENTATIONS

- **Poster Presentation:** High-dimensional Bayesian Optimization via Random Projection of Manifold Subspaces, *ECML PKDD 2024*.
- **Oral Presentation:** High-dimensional Bayesian Optimization via Random Projection of Manifold Subspaces, *ECML PKDD 2024 (video).*

PUBLICATIONS

1. **Nguyen, QA.H.*,** Tran, T.H.*, Sunil Gupta, Dung D. Le (2025), *Designing Search Spaces for Unbounded Bayesian Optimization via Transfer Learning*, Accepted at ECML PKDD 2025.
2. Vu Viet Hoang*, **Nguyen, QA.H.***, Tran, T.H.* (2024), *Bayesian Optimization for Unknown Cost-Varying Variable Subsets with No-Regret Costs*, Accepted at AAAI 2025.
3. **Nguyen, QA.H.,** Tran, T.H. (2024), *High-Dimensional Bayesian Optimization via Random Projection of Manifold Subspaces*, Accepted at ECML PKDD 2024.
4. Anh N.N., **Anh N.H.Q.**, Tung N.X., Anh N.T.N. (2021), *Feature Selection Using Genetic Algorithm and Bayesian Hyper-parameter Optimization for LSTM in Short-Term Load Forecasting*, Accepted at ICISN 2021.

** indicates equal contribution.*