Duc Q. Nguyen

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RESEARCH SUMMARY

Research Interests:
- Generative Models
- Graph Representation Learning
- Probabilistic Machine Learning

Application Domains:
- Natural Language Processing
- Healthcare
- Education

EDUCATION

Bachelor of Engineering in Computer Science   *Aug. 2018 - Jun. 2022*
- *University of Technology - Vietnam National University HCMC, Vietnam*
  - Cumulative GPA: 3.50/4.00, First Class Honor
  - Thesis: AI-Powered Decision Support System for Antiviral Pharmaceutical Formulation
  - Thesis Grade: 3.84/4.00 (9.6/10)

Master by Research in Computer Science   *Jan. 2023 - now*
- *University of Technology - Vietnam National University HCMC, Vietnam*
  - Thesis: Optimizing subgraph isomorphism prediction models with application orientation to the drug design process

WORKING EXPERIENCE

Teaching Assistant   *Apr. 2023 - now*
- *University of Technology - Vietnam National University HCMC*

RESEARCH EXPERIENCE

Visiting Student Researcher - Stanford University
- *Stanford Trustworthy AI Research Lab*   *Sep. 2024 - Dec. 2024*

Research Assistant
- *Vietnamese-Swiss Joint Research Project*   *Feb. 2022 - Dec. 2023*
Project: "Human and Algorithms for Detecting and Counter-attacking Fake Medical News"
- *Vietnam National Scientific Project*   *Feb. 2022 - Sep. 2025*
Project: "Building an automatic translation system from Vietnamese to Bahnar and a Bahnar speech synthesis system (including all dialects)" – Role: Member

PUBLICATIONS

Conference papers:

1. Sang T. Truong, Duc Q. Nguyen, Willie Neiswanger, Ryan-Rhys Griffiths, Stefano Ermon, Nick Haber, Sanmi Koyejo, "Nonmyopic Bayesian Optimization in Dynamic Cost Settings," *Under Review at ICLR 2025*.

2. Sang T. Truong*, Duc Q. Nguyen*, Toan Nguyen*, Dong D. Le*, Nhi N. Truong*, Tho Quan, Sanmi Koyejo, "Crossing Linguistic Horizons: Finetuning and Comprehensive Evaluation of Vietnamese Large Language Models," in *Proceedings of The 2024 Annual Conference of the North American Chapter of the Association for Computational Linguistics* (**NAACL, A-ranked Conference**), 2024.

3. Khang N. H. Vo, Dong Le, Dat M. T. Phan, Sang T. Nguyen, Nguyen Q. Pham, Oanh N. Tran, Duc Q. Nguyen, Hieu M. T. Vo, Tho Quan, "Revitalizing Bahnar Language through Neural Machine Translation: Challenges, Strategies, and Promising Outcomes," in *The 14th Symposium on Educational Advances in Artificial Intelligence* (**EAAI, Symposium at A*-ranked Conference**), 2024.

4. Nhi Ngoc Truong, Duc Quang Nguyen, Jeffrey Gropp, Sang T. Truong, "Hybrid Transformer and Holt-Winter's Method for Time Series Forecasting," *ICLR Workshop: Learning from Time Series for Health* (**Workshop at A*-ranked Conference**), 2024.

5. Sang T. Truong, Duc Q. Nguyen, Tho Quan, Sanmi Koyejo, "Thomas: Learning to Explore Human Preference via Probabilistic Reward Model," in *ICML Workshop: The Many Facets of Preference-Based Learning* (**MFPL, Workshop at A*-ranked Conference**), 2023.

6. Thanh Toan Nguyen, Quang Duc Nguyen, Zhao Ren, Jun Jo, Quoc Viet Hung Nguyen, Thanh Tam Nguyen, "10X Faster Subgraph Matching: Dual Matching Networks with Interleaved Diffusion Attention," In *Proceedings of 2023 International Joint Conference on Neural Networks* (**IJCNN, B-ranked Conference**), 2023.

7. Hoang-Danh Nguyen, Thanh-Phong To, Duc Q. Nguyen, Thanh-Trung Huynh, Tham Tran, Cong-Tuan Bui, Tho Quan, "A novel approach for non-query fake news detection using K-SOM and Graph Neural Networks," in *Proceedings of 15th International Conference on Knowledge and Systems Engineering* (KSE), 2023.

8. Duc Q. Nguyen, Khoan D. Le, Bach T. Ly, An D. Nguyen, Quang H. Nguyen, Tuan H. Nguyen, Cuong Quoc Duong, Thanh N. Truong, Phuong Thuy Viet Nguyen, Tho T. Quan, "Towards *de Novo* Drug

Design for the Coronavirus: A Drug-Target Interaction Prediction Approach Using Atom-Enhanced Graph Neural Network with Multi-Hop Gating Mechanism," In *Proceedings of 9th NAFOSTED Conference on Information and Computer Science* (**NICS**), 2022. **Best Paper Award.**

9. Cuong Nguyen Dang, Minh Nguyen Huynh, Duc Nguyen Quang, Duc Nguyen Quang, Thinh Nguyen Tien, Khuong Nguyen An, Chon Le Trung, and Tho Quan Thanh, "BeCaked+: An Explainable AI Model to Forecast Delta-spreading Covid-19," In *Proceedings of 2022 International Conference on Innovations in Computing Research* (ICR'22), 2022.

Journal articles:

1. Duc Q. Nguyen, Thanh Toan Nguyen, Jun Jo, Florent Poux, Shikha Anirban, Tho Quan, "Explainable Neural Subgraph Matching with Learnable Multi-hop Attention," *IEEE Access* (**Q1**), 2024

2. Hoang-Dung Nguyen, Duc Q. Nguyen, Cong-Duy Nguyen, Phong T. To, Danh H. Nguyen, Huy Nguyen-Gia, Long H. Tran, Anh Q. Tran, An Dang-Hieu, Anh Nguyen-Duc, Tho Quan, "Supervised Learning Models for Social Bot Detection: Literature review and benchmark," *Expert System with Applications* (**Q1**), vol. 238, p. 122217, 2024.

3. La Cam Huy, Le Quang Minh, Tran Ngoc Oanh, Le Duc Dong, Duc Q. Nguyen, Nguyen Tan Sang, Tran Quan, Tho Quan, "Low-Rank Adaptation Approach for Vietnamese-Bahnaric Lexical Mapping from Non-Parallel Corpora," *Science & Technology Development Journal - Engineering and Technology*, vol. 6, no. SI8, 2024.

4. Duc Q. Nguyen, Nghia Q. Vo, Thinh T. Nguyen, Khuong A. Nguyen, Quang H.Nguyen, Dang N. Tran, and Tho T. Quan, "BeCaked: An Explainable Artificial Intelligence Model For COVID-19 Forecasting," *Scientific Reports* (**Q1**), vol. 12, no. 7969, 2022.

5. Duc Nguyen, Thien Pham, and Tho Quan, "Design, implementation and evaluation for a high precision prosthetic hand using MyoBand and Random Forest algorithm," *Science & Technology Development Journal - Engineering and Technology*, vol. 3, pp. 28-39, 2020.

FELLOWSHIPS, SCHOLARSHIPS	**Master student:**
	- *Microsoft Accelerate Foundation Models Research (AMFR)*
	$60.000 USD *Nov. 2023 - Jan. 2025*
	- *Master, PhD Scholarship Programme of Vingroup Innovation Foundation (VINIF)*
	$5.000 USD *Dec. 2022 - Nov. 2023*
	Undergraduate:
	- *Honda Award 2020* - $450 USD
	- *VinAI Scholarship 2020* - $450 USD
	- *KSYS-CUBE Scholarship 2020* - ¥50.000 JPY
	- *Odon Vallet Fellowship 2018* - $425 USD
	- *Odon Vallet Fellowship 2017* - $400 USD

MANAGEMENT EXPERIENCE	**Laboratory Senior Member**	*Jun. 2022 - now*
	- *VNPT-HCMUT Laboratory*	
	Project Manager	*Nov. 2019 - Nov. 2021*
	- *Bach Khoa Artificial Intelligence Club (BKAIC), University of Technology - VNU-HCM*	

CERTIFICATE	**Certificate of Merit: Students with excellent achievements in learning and research in the field of Information Technology, Artificial Intelligence**	*Dec. 2020 and Dec. 2021*
	- *Director of the HCMC Department of Information and Communication*	
	Bach Khoa Youth Award 2020: Certificate of Typical Student	*Dec. 2020*
	- *University of Technology - Vietnam National University HCMC*	

REFERENCES	**Associate Professor Tho Quan**
	- *Acting Dean of Faculty of Computer Science and Engineering, University of Technology - VNU-HCM*
	- *Email:* qttho@hcmut.edu.vn
	Dr. Thanh-Toan Nguyen
	- *School of Information and Communication Technology - Griffith University*
	- *Email:* thanhtoan.nguyen@griffith.edu.au
	Mr. Sang T. Truong
	- *PhD Student, Department of Computer Science - Stanford University*
	- *Email:* sttruong@cs.stanford.edu