Martin Nguyen (Duc Q. Nguyen)

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RESEARCH SUMMARY

Research Interests:

- Artificial Intelligence
- Computational Biology
- Graph Representation Learning

Application Domains:

- Drug Discovery
- Graph Theory
- Natural Language Processing

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
- Advisors: Assoc. Prof. Tho Quan; Mr. Tam Bang

PUBLICATIONS

Conference articles:

1. 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**), 2023.
2. Hoang-Dung Nguyen, Duc Q. Nguyen, Hao Luong Pham, Tho Thanh Quan, "Social Bot Detector using Graph Neural Networks," In *Proceedings of 2022 RIVF International Conference on Computing and Communication Technologies* (**RIVF**), 2022.
3. 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* 9^{th} *NAFOSTED Conference on Information and Computer Science* (**NICS**), 2022. **Best Paper Award.**
4. 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.
5. Thanh Tam Nguyen, Thanh Toan Nguyen, Thanh Cong Phan, Quang Duc Nguyen, and Quoc Viet Hung Nguyen, "Realtime Bushfire Detection with Spatial-based Complex Event Processing," in *Proceedings of 15th International Conference on Advanced Computing and Applications* (**ACOMP**), 2021.

6. Duy Nguyen, Duc Nguyen, Thong Nguyen, Khoi Ngo, Hung Cao, Thinh Vuong, and Tho Quan, "Automatic Container Code Recognition Using MultiDeep Pipeline," in *Proceedings of 12th International Conference on Computational Collective Intelligence* (**ICCCI**), 2020.

Journal articles:

1. 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*, vol. 12, no. 7969, 2022.
2. 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:

- Master, PhD Scholarship Programme of Vingroup Innovation Foundation (VINIF) *Dec. 2022 - Nov. 2023*

Undergraduate:

- Honda Award 2020
- VinAI Scholarship 2020
- KSYS-CUBE Scholarship 2020
- Vallet Fellowship 2018
- Vallet Fellowship 2017

RESEARCH EXPERIENCE

Research Assistant *Feb. 2022 - now*

- *Vietnamese-Swiss Joint Research Project*

- Project: "Human and Algorithms for Detecting and Counter-attacking Fake Medical News"
  - Building a human-powered real-time system for detecting and counter-attacking fake medical news from large-scale dynamic social networks with multilingual, scalable, and cost-effective techniques.

WORKING EXPERIENCE

Teaching Assistant *Apr. 2023 - now*

- *Ho Chi Minh City University of Technology, Vietnam*
- *Vietnam National University Ho Chi Minh City, Vietnam*

Research and Development AI/ML Intern *Jul. 2021 - Sep. 2021*

- *TPS Software, Vietnam*

- Project: "Helpdesk chatbot"
  - Build and deploy a chatbot to automatically answer some common problems and connect to IT human in case hard problems. The chatbot uses rule-based approach together with Intent Classification and Name Entity Recognition.
- Project: "Story point estimation system"
  - In CRUD, when assigning tasks to staffs, the supervisors have to manually estimate the number of required story points for the tasks. This system will automatically give the supervisors estimated story points based on the descriptions of the tasks.

- Project: "Recommendation system for retail E-commerce website"
  - The recommendation system for E-commerce website is built upon graph database. The behind algorithm is Collaborative Filtering combined with Pearson Similarity ranking.

MANAGEMENT EXPERIENCE

Laboratory Senior Member *Jun. 2022 - now*
- VNPT Laboratory
Guiding undergraduate laboratory members.

Project Manager *Nov. 2019 - Nov. 2021*
- Bach Khoa Artificial Intelligence Club (BKAIC)
Contributing to the development of training programs, managing and orienting the projects of BKAIC.

SKILLS

Technical:
- *Deep Learning Framework:* TensorFlow (intermediate), PyTorch (intermediate)
- *Programming Languages:* Python, C/C++, Javascript, Java, Swift
- *Operating Systems:* Linux/Unix, Windows

Others:
- Probability and Statistics
- Photography

CERTIFICATE

Certificate of Merit *Dec. 2021*
- Director of the HCMC Department of Information and Communication
Students with excellent achievements in learning and research in the field of Information Technology, Artificial Intelligence

EF SET English Certificate 75/100 (C2 Proficient) *Nov. 2021*
- EF Standard English Test (EF SET)
Listening: 74/100; Reading: 75/100;

Certificate of Typical Student *Dec. 2020*
- Ho Chi Minh City University of Technology - Vietnam National University HCMC
Bach Khoa Youth Award 2020

Certificate of Merit *Dec. 2019*
- Director of the HCMC Department of Information and Communication
Student with excellent achievements in Artificial Intelligence research

REFERENCES

Associate Professor Tho Quan
- Vice Dean of Faculty of Computer Science and Engineering
- Ho Chi Minh City University of Technology - Vietnam National University HCMC
- Email: qttho@hcmut.edu.vn