

Research Interests

- Present My research focuses on enhancing the efficiency, robustness and confidence coverage of Machine Learning models (NeuralODEs, Graph Neural Networks, and Continual Learning) by integrating.
- Optimization methods (Momentum, Adaptive and Derivative free Optimizers).
 - Statistical methods (Conformal Prediction, Bayesian & Probabilistic).

Education

- 2019 - 2023 **Hanoi University of Science and Technology (HUST)**, *Hanoi, Vietnam*.
◦ B.Sc, Major in Computer Science (Honors Program), CPA: 3.87 / 4.0 (Class rank: 3/35).
◦ Thesis: Continuous Neural Ordinary Differential Equations [pdf] (Best Thesis Presentation Award).
Supervised by [Dr. Linh V. Ngo](#).
- 2016 - 2019 **Le Quy Don High School for Gifted Students, Quang Tri Province**, *Quang Tri, Vietnam*.
Major in Mathematics, CPA: 9.1 / 10.0 (Class rank: 1/30).

Experience

- Nov 2021 - Present **AI Research Resident**, FPT SOFTWARE AI CENTER, ai.fpt-software.com.
◦ Advisors: [Prof. Tan M. Nguyen](#) & [Dr. Thieu N. Vo](#).
◦ Research topics: Conformal Prediction and Calibration, Deep Implicit Models, Graph Neural Networks.
- Apr 2021 - Nov 2021 **Undergraduate Research Student**, DATA SCIENCE LABORATORY, ds.soict.hust.edu.vn.
◦ Advisors: [Dr. Linh V. Ngo](#) & [Prof. Khoat Q. Than](#).
◦ Research topics: Continual learning, Probabilistic Graphical Models, Variational Inference.
- Jul 2021 - Sep 2021 **Data Analyst Intern**, VINBIGDATA, vinbigdata.com.
Utilized Machine Learning methods to generate detailed reports examining the gene expression changes observed in individuals post-vaccination.
- Apr 2021 - Jul 2021 **Viettel Digital Talent**, VIETTEL DIGITAL, digital.viettel.vn.
◦ Completed introductory courses covering Deep Learning, Computer Vision, Natural Language Processing, and Big Data.
◦ Participated in a Kaggle competition and achieved a ranking of 108 out of 4410 on the final private leaderboard [contest, solution].

Publications

- 2022 **Improving Neural Ordinary Differential Equations with Nesterov’s Accelerated Gradient Method**.
Nghia H. Nguyen*, Tan M. Nguyen*, **Huyen K. Vo**, Stanley J. Osher, Thieu N. Vo (**NeurIPS**: Conference on Neural Information Processing Systems, 2022) [pdf], * indicates co-first authors.
- 2022 **Development of Vietnamese Text-To-Speech for VLSP Challenge 2021**.
Le Minh Nguyen, Do Quoc An, Vu Quoc Viet, **Vo Thuc Khanh Huyen** (**VNU Journal of Science: Computer Science and Communication Engineering**, 2022)[pdf].

Submissions

- 2023 **Continuous Neural Ordinary Differential Equations**.
Nghia H. Nguyen*, **Huyen K. Vo***, Long M. Bui*, Tan M. Nguyen, Stanley J. Osher, Thieu N. Vo (In preparation).

National/International Prize

- 2019 **Vietnam Mathematics Olympiad (VMO)**.
◦ The annual national mathematics competition for high school students.
◦ Third prize (2019).
- 2017 **Singapore Mathematics Olympiad (SMO)**.
◦ Silver medal (2017).
- 2019 - 2021 **Hanoi University of Science and Technology Excellent Scholarship**.
Scholarship awarded to top-performing students who exhibit impressive GPAs and training achievements.
- 2017 - 2019 **Vietnam Institute for Advanced Study in Mathematics (VIASM) Scholarship**.
Scholarship associated with the National Mathematics Development Program.

Achievements

- 2023 **Participant, Vietnam Summer School of Science (VSSS) '10**, Among 150 participants chosen from 700 applicants nationwide.
- 2022 **Participant, Pre-PhD Summer School by VinUni-Illinois Smart Health Center, VinUniversity**, Among 50 participants chosen from 220 applicants nationwide.
- 2022 **Second Place in UET Hackathon**, Track: Data Science, [contest, solution].
- 2021 **First Place in the shared task of Text To Speech, VLSP 2021**, The 8th International Workshop on Vietnamese Language and Speech Processing, [solution].
- 2021 **Impressive Prize, Top 7 Group A in FPT Edu Hackathon**, Image Detection, Recognition, and Classification.

Teaching Experience

- Oct 2019 - **Mathematics Teaching Assistant**, HEXAGON OF MATHS AND SCIENCE, hexagon.edu.vn.
- Mar 2020 Taught Mathematics for students who attend Singapore University Entrance Exam (UEE).
- Oct 2022 - **Machine Learning Teaching Assistant**, MINDX TECHNOLOGY SCHOOL, mindx.edu.vn.
- Present
 - o Helped develop curriculum for over 50 students.
 - o Supported coding, technical issues, and graded student assignments.
 - o Courses: Machine Learning and Data Mining (Foundational algorithms, Machine learning lifecycle involves data collection, preprocessing, feature engineering, model building, evaluation, and deployment).

Extracurricular Activities

- Nov 2019 - **FPT Center for Young Talents (FYT)**, Member.
- Nov 2021 FYT is a special educational organization with the goal of discovering and connecting young talents across the country.
- May 2020 - **Hanoi Math Modelling**, Content Team.
- Jan 2021 Produced educational content for both Math Modeling training and Facebook posts.

Skills

- Languages Python, R, Java, C/C++, SQL.
- Frameworks PyTorch, Tensorflow, Keras, Scikit-learn.
- Big Data Spark, Hadoop, Kafka, NoSQL.
- DevOps Linux, Docker.
- Web HTML5, CSS3, JavaScript, jQuery, Ajax, Java (Servlet, Spring MVC, Spring Boot).
- Certificates Machine Learning DevOps Engineer Nanodegree program (Udacity), Data Engineering Nanodegree program (Udacity), Data Streaming (Udacity).

Languages

- Vietnamese Native.
- English IELTS Overall 7.5: Reading 8.5, Listening 8.0, Writing 6.5, Speaking 6.5.
- Others Japanese, Korean.

References

- Professor **Tan M. Nguyen**, NATIONAL UNIVERSITY OF SINGAPORE, SINGAPORE.
tanmn@nus.edu.sg [website, scholar].
- Lecturer **Thieu N. Vo**, TON DUC THANG UNIVERSITY, HO CHI MINH CITY, VIETNAM.
vongochieu@tdtu.edu.vn [website, scholar].
- Professor **Khoat Q. Than**, HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY, VIETNAM.
khoattq@soict.hust.edu.vn [website, scholar].
- Lecturer **Linh V. Ngo**, HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY, VIETNAM.
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