

Tran, Dinh Quang Loc (Loci)

Current position: Research Assistant,
[Computational Biology Lab](#)
National Tsing Hua University, Taiwan

Birthplace: Viet Nam
Birth year: 1998
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RESEARCH INTEREST

My interests lie in computational biology, particularly in applying mathematics (e.g., ML/AI) to understand biological systems. I developed a bioinformatics tool for predicting protein pathogenicity using deep neural networks, which sparked my passion for integrating ML with biological data. I am eager to work on projects focused on protein design and protein folding, combining ML with MD simulations and docking for drug discovery, or developing probabilistic models to describe biological systems.

EDUCATION

MS in Life Sciences and Medicine | National Tsing Hua University, Taiwan 2024

GPA: 4.16/4.3

Relevant courses: Computational Biology; Molecular Simulation and Modelling I&II; Statistics and ML I&II

Dissertation: TANDEM-DIMPLE: Transfer-leArNing-ready and Dynamics-Empowered Model for DIsease-specific Missense Pathogenicity Level Estimation.

BS in Biotechnology | HCM University of Science, Vietnam 2020

GPA: 3.05/4.0

Relevant courses: Calculus; Probability&Statistics; Biochemistry; Genetics Engineering; Chemistry I&II&III

Dissertation: Improved fermentation efficiency for rhPDGF-BB production by methanol pulse method.

RESEARCH EXPERIENCE

Research Assistant | [Dr. Lee-Wei Yang's lab](#) 2024 - Present

Institute of Bioinformatics and Structural Biology, National Tsing Hua University, Taiwan.

NTHU & NTUH joint project: "AI-Aided Variant Interpretation for Precision Medicine in Hereditary Hearing Impairment".

- Developed a modular and automated *Python* package for pathogenicity prediction of missense variants.
- Developed a web server using *Gradio* and *MongoDB* to enable users access to TANDEM-DIMPLE.

🌐 <https://dyn.life.nthu.edu.tw/TANDEM/>

🔗 <https://github.com/locitrans/tandem-dimple>

MS Student | [Dr. Lee-Wei Yang's lab](#) 2022 - 2024

Institute of Bioinformatics and Structural Biology, National Tsing Hua University, Taiwan.

NTHU & NTUH joint project: "Developing a pathogenicity prediction platform for *GJB2* variants using molecular dynamics-based analysis".

- Developed a DNN for missense variant pathogenicity prediction, using a diverse feature including sequence, structure, and dynamics protein properties.
- Applied transfer learning to fine-tune the general model for disease-specific prediction.

BS student | [Dr. Tri-Nhan Nguyen's lab](#) 2019 - 2020

Department of Biology and Biotechnology, HCM University of Science, Vietnam

VLIR-UOS South Initiatives Project: "Research and Development of a Dosage Form for Chronic Wound Treatment Based on Recombinant PDGF-BB Protein"

- Optimized large-scale fermentation of recombinant PDGF-BB in *Pichia pastoris*.
- Developed a methanol pulse induction strategy based on dissolved oxygen (DO) monitoring.

PUBLICATIONS

1. **Loci Tran**, Pei-Lung Chen, Cheng-Yu Tsai, Chen-Chi Wu, Lee-Wei Yang. “Predicting the pathogenicity of SAVs Transfer-leArNing-ready and Dynamics-Empowered Model for DIsease-specific Missense Pathogenicity Level Estimation” (in preparation).
2. **Loc TDQ**, Nghia LT, Lac TH, Xuan TMH, Nhan NT (2020): "[Production of rhPDGF-BB from *Pichia pastoris* in 7.5-L and 25-L fermentation scales](#)", Vietnam Journal of Biotechnology, (12) 457-462.

PRESENTATIONS

1. **Loci Tran**, Lee-Wei Yang. “Predicting the pathogenicity of SAVs Transfer-leArNing-ready and Dynamics-Empowered Model for DIsease-specific Missense Pathogenicity Level Estimation”. TSC2025 AI Application Competition, Taiwan (2025).
2. **Loci Tran**, Lee-Wei Yang. “Predicting the pathogenicity of SAVs Transfer-leArNing-ready and Dynamics-Empowered Model for DIsease-specific Missense Pathogenicity Level Estimation”. Smart Computing Forum. Taipei, Taiwan (2025).
3. **Loci Tran**, Cheng-Yu Tsai, Chen-Chi Wu, Lee-Wei Yang. “Establishing a prediction platform for the pathogenicity of GJB2 variants using molecular dynamic simulation and machine learning”, 113th Annual Joint Research Project Results Presentation and Cooperation Matching Meeting Agenda with National Tsing Hua University. Hsinchu, Taiwan (2025).
4. **Loci Tran**, Lee-Wei Yang. “Pathogenicity Prediction of Missense Variants by AI”. OU-NTHU symposium. Hsinchu, Taiwan (2024).
5. **Loc TDQ**, Nghia LT, Lac TH, Xuan TMH, Nhan NT. “Production Of rhPDGF-BB from *Pichia Pastoris* in 7.5-L and 25-L fermentation scales”. Vietnam Journal of Biotechnology. Hue, Vietnam (2020).

TEACHING ASSISTANT

Introduction of Machine Learning I, National Tsing Hua University, Taiwan.	2023
Computational Biology, National Tsing Hua University, Taiwan.	2024
Series of 4 workshops about Transformer and its relation	2024-2025

※ REFERENCES

Dr. Lee-Wei Yang	Institute of Bioinformatics and Structural Biology, NTHU, Taiwan
Professor	lwyang@life.nthu.edu.tw
	Master and RA advisor from 2022 to now
Dr. Tri-Nhan Nguyen	Kien Giang University, Vietnam (2024 – present)
Lecturer	ntnhan82@vnkgu.edu.vn
	BS advisor from 2019 to 2020