

Thanh Dat Nguyen

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Former Researcher, Research Center for Genetics and Reproductive Health, University of Health Sciences, Vietnam National University - Ho Chi Minh City

OBJECTIVE

A dedicated researcher in biotechnology and bioinformatics, passionate about advancing cancer diagnostics, genetic analysis, and machine learning applications in healthcare. Pursuing graduate studies at Chang Gung University to enhance my expertise and contribute to innovative research in medical AI and data science.

EDUCATION

Tan Tao University (TTU), School of Biotechnology

Major: Biotechnology

GPA: 3.83 of 4.00

Degree: Bachelor of Science in Biotechnology

Thesis: *"Risk score for predicting lung metastasis in breast cancer patients: A novel risk assessment system using logistic regression analysis"*

Vietnam
Sep 2018 – 2022

PROFESSIONAL EXPERIENCE

Research Assistant

Quantum AI Biomedical Research Lab, Department of Artificial Intelligence, Chang Gung University

Taiwan
Sept 2025 – Present

Researcher

Research Center for Genetics and Reproductive Health, University of Health Sciences, VNU-HCM

Vietnam
Nov 2022 – July 2025

- Conducted bioinformatics analyses for cancer biomarker identification.
- Collaborated on projects focused on early cancer detection, metastasis prediction.
- Developed machine learning models for thalassemia prediction.
- Participated in national and international scientific conferences.

Wet-Lab Techniques:

- DNA/RNA extraction and purification, PCR, RT-qPCR.
- Cell Culture Techniques such as Cell Line Maintenance, Cell Viability Assays (MTT, XTT), Cryopreservation and Microscopy Techniques

Statistical and Data Analysis:

- Proficient in managing and analyzing complex biological datasets, including data processing, classification, and retrieval from public databases such as GEO, ArrayExpress and TCGA.
- Experienced in machine learning models, and bioinformatics tools (BLAST, IGV, ...).
- Advanced knowledge of using R for statistical computing and data analysis; working familiarity with Bash scripting.

RESEARCH INTERESTS

- Bioinformatics for cancer diagnosis and treatment.
- Genetic analysis of hereditary diseases.
- Machine learning applications in healthcare.

PUBLICATIONS

1. **Thanh Dat Nguyen**, Quynh-Mai Thi Nguyen, Tuong Van Nguyen, Phuong Thi Bui, Kim Nhung Thi Nguyen, Minh Nam Nguyen. Prediction of Lung Metastasis in Breast Cancer Patients Using Machine Learning Classifiers. The Journal of Molecular Diagnostics, ISSN: 1943-7811. <https://doi.org/10.1016/j.jmoldx.2025.10.010>
2. Tuong Van Nguyen, Quynh Mai Thi Nguyen, **Thanh Dat Nguyen**, Minh Linh Nguyen, Minh Nam Nguyen. Application of Machine Learning in Predicting Lung Metastasis in Breast Cancer Patients. IFMBE Proceedings, ISSN: 1680-0737. Accepted for publication on September 2024. 10th International Conference on the Development of Biomedical Engineering in Vietnam. BME 2024. IFMBE Proceedings. 2024; vol 122: pp 625–639. https://doi.org/10.1007/978-3-031-90194-2_44
3. Minh Nam Nguyen, Huy Dung Tran, Kim Nhung Thi Nguyen, **Thanh Dat Nguyen**, Dieu Hien Thi Huynh, Thu Suong Thi Nguyen, Bao An Huynh Nguyen, Giau Van Vo. Long-Term Mental Health Impact of COVID-19 on Pregnant Women in Vietnam. 10th International Conference on the Development of Biomedical Engineering in Vietnam. BME 2024. IFMBE Proceedings. 2024; vol 123: pp 928–940. https://doi.org/10.1007/978-3-031-90197-3_74
4. Dieu Hien T Huynh*, **Dat T Nguyen***, Thu Suong T Nguyen, Bao An H Nguyen, Anh T T Huynh, Vy N N Nguyen, Dat Q Tran, Thi N N Hoang, Huy Dung Tran, Dao Thanh Liem, Giau V Vo, Minh Nam Nguyen. Insights into the epidemiology and clinical aspects of post-COVID-19 conditions in adult. Chronic Illness. 2023; 21(1):157-169. doi:10.1177/17423953231209377

5. **Dat Nguyen Thanh**, Nguyen Tan Thanh Giang, Tam Vy Le, Ngoc Minh Truong, Thanh Van Ngo, Thien Ngoc Lam, Dinh Truong Nguyen, Quynh Hoa Tran, Minh Nam Nguyen. Predicting the severity of COVID-19 patients using the CD24-CSF1R index in whole blood samples. *Heliyon*. 2023; 9(3): e13945. <https://doi.org/10.1016/j.heliyon.2023.e13945>
6. Do Nguyen Thao Vy*, **Nguyen Thanh Dat**, Nguyen Le Phu Qui, Nguyen Van Thong, Pham Nguyen Huu Phuc, Hua Thi My Huyen, Tran Phuong Huy, Nguyen Nu Hai Long, Pham Thi Van Anh, Nguyen Minh Nam. Evaluation of Screening Results and Epidemiological Characteristics of Thalassemia Pregnant Women at Hung Vuong Hospital. *Tạp Chí Y học Cộng đồng (Journal of Community Medicine)*, 2024; 65 (Special Issue 12 - Thu Duc Hospital). <https://doi.org/10.52163/yhc.v65iCD12.1834>
7. Hoang Dang Hieu, **Nguyen Thanh Dat**, Nguyen Thi Quynh Mai, Nguyen Minh Nam. Predicting Lung Metastasis Potential of Breast Cancer Based on CFAP410 Expression. *Tạp chí Khoa học và Công nghệ Đại học Thái Nguyên (Thai Nguyen University Journal of Science and Technology)*, 2023; 228(13): 148–156. <https://doi.org/10.34238/tnu-jst.7726>
8. **Thanh Dat Nguyen**, Quynh Hoa Tran, Dinh Truong Nguyen, Minh Nam Nguyen. GADD45B Expression Is Associated with Risk of Bone Metastasis in Breast Cancer Patients. *Tạp chí Khoa học Công nghệ và Thực phẩm (Journal of Science Technology and Food.)*, 2021; 21 (4): 94–109.

CONFERENCES

- Thanh Dat Nguyen**, Ha Thanh Dang Thi, Phu Qui Nguyen Le, Thi Phuong Bui, Thao Vy Do Nguyen, Minh Nam Nguyen. Development of an Ensemble Model and a Web-Based Platform for Prenatal Thalassemia Screening in Vietnam. Oral presentation at Medical AI Workshop: Making AI Safe and Healthy (MASH), Asian Conference on Machine Learning 2025, Taipei, Taiwan. December 12, 2025
- Thanh Dat Nguyen**, Tuong Van Nguyen, Phu Qui Nguyen Le, Thao Vy Do Nguyen, Minh Nam Nguyen. An ensemble learning model for thalassemia prediction from complete blood count test. Oral presentation at the 22nd National Youth Conference on Medical Science and Technology 2024, Can Tho University of Medicine and Pharmacy, Can Tho City, Vietnam. December 25–27, 2024
- Tuong Van Nguyen, Quynh Mai Thi Nguyen, **Thanh Dat Nguyen**, Minh Linh Nguyen, Minh Nam Nguyen. Application of machine learning in predicting lung metastasis in breast cancer patients. Oral presentation at The 10th International Conference in Vietnam on the Development of Biomedical Engineering (BME10), Phan Thiet, Binh Thuan, Vietnam. July 25–27, 2024
- Phu Qui Nguyen Le, **Thanh Dat Nguyen**, Hoa Phuc Le, Thi Phuong Bui, Minh Nam Nguyen. Application of machine learning models for early detection and personalized treatment of liver cancer. Oral and Poster presentation at the Scientific Conference "Digital Transformation and Artificial Intelligence Applications in Diagnosis and Treatment" Thong Nhat Hospital, Ho Chi Minh City, Vietnam. May 31, 2024
- Duc Phuc Ngo, Ngoc Dien Nguyen, **Thanh Dat Nguyen**, Minh Nam Nguyen. *In silico* screening of biomarkers for early diagnosis and prognosis in patients with non-small cell lung cancer. Poster presentation at the Scientific Conference "Digital Transformation and Artificial Intelligence Applications in Diagnosis and Treatment" Thong Nhat Hospital, Ho Chi Minh City, Vietnam. May 31, 2024
- Thanh Dat Nguyen**, Tuong Van Nguyen, Minh Nam Nguyen. Application of machine learning in predicting lung metastasis in breast cancer patients. Poster presentation at the Scientific Conference "Digital Transformation and Artificial Intelligence Applications in Diagnosis and Treatment" Thong Nhat Hospital, Ho Chi Minh City, Vietnam. May 31, 2024
- Thanh Dat Nguyen**, Duc Phuc Ngo, Ngoc Dien Nguyen, Minh Nam Nguyen. *In silico* screening of biomarkers for early diagnosis, prognosis, and treatment response prediction in patients with non-small cell lung cancer. Poster presentation at the 6th Rencontres de Quy Nhon – International Biology Conference 2023, The International Centre for Interdisciplinary Science and Education (ICISE), Quy Nhon City, Vietnam. October 20–22, 2023
- Ngoc Dien Nguyen, Huy Dung Tran, Kim Nhung Thi Nguyen, **Thanh Dat Nguyen**, Dieu Hien Thi Huynh, Thu Suong Thi Nguyen, Bao An Huynh Nguyen, Giau Van Vo, Minh Nam Nguyen. A comparative analysis of mental health status among women with and without COVID-19 infection during pregnancy. Poster presentation at the 6th Rencontres de Quy Nhon – International Biology Conference 2023, The International Centre for Interdisciplinary Science and Education (ICISE), Quy Nhon City, Vietnam. October 20–22, 2023
- Thanh Dat Nguyen**, Quynh Hoa Tran, Dinh Truong Nguyen, Minh Nam Nguyen. *GADD45B* expression is associated with risk of bone metastasis and survival outcome in breast cancer patients. Oral presentation at the 4th Rencontres de Quy Nhon – International Biology Conference 2021, The International Centre for Interdisciplinary Science and Education (ICISE), Quy Nhon City, Vietnam. December 13–15, 2021

<p>Thanh Dat Nguyen, Thanh Giang Tan Nguyen, Tam Vy Le, Ngoc Minh Truong, Thanh Van Ngo, Dinh Truong Nguyen, Minh Nam Nguyen. Identification of an immune-related gene-pairs index in the prediction of COVID-19 severity. Poster presentation at the 4th Rencontres de Quy Nhon – International Biology Conference 2021, The International Centre for Interdisciplinary Science and Education (ICISE), Quy Nhon City, Vietnam.</p>	December 13–15, 2021
<p>Thanh Dat Nguyen, Thanh Giang Tan Nguyen, Tam Vy Le, Ngoc Minh Truong, Thanh Van Ngo, Minh Nam Nguyen. Prognosis of COVID-19 severity in patients using the CD24-CSF1R index. Oral presentation at the Young Scientists Seminar "COVID-19 Vaccine: Research and Applications" of the Center of Science and Technology Development for Youth, Ho Chi Minh City, Vietnam.</p>	November 2021
<p>Dat Nguyen Thanh, Dinh Truong Nguyen, Minh Nam Nguyen. Up-regulation of <i>GADD45B</i> is associated with high risk of bone metastasis and poor survival outcome in breast cancer patients. Oral presentation at the Student Bio-Science Conference 2021, VNUHCM-University of Science, Ho Chi Minh City, Vietnam.</p>	May 2021
<p>AWARDS & ACHIEVEMENTS</p>	
<p>MOE Taiwan Scholarship 2025 <i>Awarded by the Ministry of Education, Taiwan, for Master program at AI Department, CGU</i></p>	2025 – 2027
<p>The 4th Ho Chi Minh City Creative Award <i>Organized by the Ho Chi Minh City People's Committee</i> Third Prize, Field of Science and Technology (Field 6): "Application of Big Data analysis and machine learning in identifying biomarkers for the diagnosis, prognosis, and treatment of primary liver cancer."</p>	June 2025
<p>The 28th Ho Chi Minh City Technical Creativity Contest <i>Organized by the Ho Chi Minh City Union of Science and Technology Associations</i> Third Prize: "Development of an ensemble machine learning model and a website for prenatal Thalassemia screening."</p>	June 2025
<p>The 11th Binh Duong Province Technical Creativity Contest (2024 - 2025) <i>Organized by Binh Duong Union of Science and Technology Associations</i> Second Prize: "Application of Big Data analysis and machine learning in identifying biomarkers for the diagnosis, prognosis, and treatment of primary liver cancer."</p>	May 2025
<p>The 22nd Youth Science and Technology Conference in the Health Sector <i>Chaired by Ministry of Health and Organized by Can Tho University of Medicine and Pharmacy</i> Third Prize, Biomedical Engineering Section: Oral presentation on "An ensemble learning model for thalassemia prediction from complete blood count test."</p>	Dec. 2024
<p>Smart City 2024 Competition <i>Organized by Saigon Hi-tech Park Incubation Center (SHTP-IC)</i> First Prize, Digital technology, microchips, IoT Projects (Group A): "Development of a website for Thalassemia screening based on an artificial intelligence platform." Third Prize, Biotechnology Projects (Group B): "Development of software to support early diagnosis, prognosis, and treatment of liver cancer."</p>	Dec. 2024
<p>AI.STAR 2024 Competition <i>Chaired by the Ho Chi Minh City Department of Science and Technology and Organized by Saigon Innovation Hub</i> Certification for Advancing to Incubation: "Application of artificial intelligence in building a machine learning model and developing a website for prenatal Thalassemia screening." Certification for Advancing to Incubation: "Developing an AI-integrated website for diagnosis, prognosis, and treatment of liver cancer."</p>	Nov. 2024
<p>Scientific Conference on Digital Transformation and AI in Diagnosis and Treatment <i>Organized by the Center of Science and Technology Development for Youth</i> Second Prize: Poster and oral presentation on "Application of machine learning models for early detection and personalized treatment of liver cancer." Consolation Prize: Poster presentation on "<i>In silico</i> screening of biomarkers for early diagnosis and prognosis in patients with non-small cell lung cancer." Impressive Poster Award: Poster presentation on "Application of machine learning in predicting lung metastasis in breast cancer patients."</p>	May 2024

Scientific Initiative 2024 <i>Organized by the Ministry of Science and Technology</i> Consolation Prize: Project on " Diagnosis, prognosis and treatment prediction of liver cancer based on <i>F12</i> gene expression."	May 2024
Young Science Conference “COVID-19 Vaccine: Research and Application” <i>Organized by the Center of Science and Technology Development for Youth</i> Second Prize: Oral presentation on "Prognosis of COVID-19 severity in patients using the CD24-CSF1R index."	Nov. 2021
Student Bio-Science Conference 2021 <i>Organized by University of Science - VNUHCM</i> Excellent Presentation Award: Oral presentation on "Up-regulation of <i>GADD45B</i> is associated with high risk of bone metastasis and poor survival outcome in breast cancer patients."	May 2021
Tan Tao University Scholarship for four-year undergraduate program	2018 – 2022

RESEARCH PROJECTS

1	Validity of Red Cell Distribution Width Index to Differentiate between Iron Deficiency Anemia and Thalassemia Member Vietnam National University, Ho Chi Minh City, C2025-44-04	2025–2027
2	Screening Nature's Melanin Inhibitors: Medicinal Plants for Skin Brightening Member Vietnam National University, Ho Chi Minh City, C2024-44-26	2024-2026
3	Building a machine learning model for the diagnosis of hepatocellular carcinoma Member Vietnam National University, Ho Chi Minh City, C2024-44-27	2024-2026
4	Develop a method for early detection of prostate cancer based on the expression of miRNA in serum Member Vietnam National University, Ho Chi Minh City, C2023-44-6	2023-2025
5	Prediction of Lung Metastasis in Breast Cancer Patients Member Vietnam National University, Ho Chi Minh City, C2023-44-11	2023-2025
6	<i>In silico</i> screening of potential antidiabetic phytochemicals from <i>Ipomoea Bettas (L.)</i> leaf against multiple therapeutic targets of T2DM Member Vietnam National University, Ho Chi Minh City, C2023-44-13	2023-2025
7	<i>GADD45B</i> Expression Is associated With Risk of Bone Metastasis and Survival Outcome in Breast Cancer Patients Principle Investigator Tan Tao University, TTU.RS.21.305.006	2021-2022

COMMUNITY ENGAGEMENT

- Active participation in youth science initiatives and technology development seminars.
- Regularly share research findings at conferences and scientific workshops.
- Coordinate undergraduate student research groups, support graduation theses and academic competitions, promoting teamwork, scientific thinking, and research culture.

LANGUAGE

English: IELTS 6.0, TOEIC 865 (expired); Vietnamese (native language).