

Tham H. Hoang, PhD

Address: 80 Cisar Road, Apt 11, Willington, CT 06279, USA

Email: tham.hoang@uconn.edu

Google Scholar: <https://scholar.google.com/citations?user=qILHHJsAAAAJ>

ResearchGate: https://www.researchgate.net/profile/Tham_Hoang2

A Green Card holder

Research Interests

Genetic testing, Pharmacogenomics, Cancer Immunology, and Pathway Analysis

Academic Degrees

University of Connecticut (UConn), CT, USA	Computer Science & Engineering	MS & PhD	2013 - 2018
Hanoi Uni of Science and Technology, Vietnam	Information Technology	BE	2005 - 2010

Academic and Professional Experiences

Senior Bioinformatician	GeneStory JSC., Vietnam	May 2022 - present
Senior Bioinformatician	Big Data Institute of Vingroup, Vietnam	April 2021 - April 2022
Data Scientist	Mount Sinai Genomics Inc. (d/b/a Sema4, now GeneDX, USA)	July 2018 - July 2021
Research Assistant	Shin lab, UCONN	June 2014 - June 2018

Awards

- A1. Graduate Predoctoral Fellowship, University of Connecticut, 2014, 2016, and 2017
- A2. Honorable Mention Scientific Poster Session in Computer Science, 12th VEF Fellows and Scholars Conference, March 2016
- A3. Vietnam Education Foundation fellowship, 2013 - 2015
- A4. Dean's Award for excellent student, School of Information and Communication Technology, Hanoi University of Science and Technology, October 2009

Patents

1. **Tham H. Hoang**, Giang M. Vu, Vinh C. Duong, Dat T. Nguyen, Trang TH. Tran, Nam S. Vo. *Self-designed single-nucleotide polymorphism chip and method of computing score for given populations using self-designed single-nucleotide polymorphism chip*. U.S. Patent, filed June 29, 2023. Patent pending.

Publications

1. Hang Viet Dao[†], Vinh Chi Duong[†], Long Van Dao, Long Bao Hoang, Thien Khac Nguyen, Thang Luong Pham, Giang Minh Vu, **Tham Hong Hoang***. *A promising DNA methylation analysis pipeline for epigenetic studies and clinical implementation in inflammatory bowel disease*. Digestive Medicine Research, April 2023. ([†]equal contribution, *corresponding author)
2. **Tham H. Hoang**, Giang M. Vu, Mai H. Tran, Trang T. H. Tran, Quang D. Le, Khanh V. Tran, Tue T. Nguyen, Lan T. N. Nguyen, Thinh H. Tran, Van T. Ta & Nam S. Vo. *Investigation of target sequencing of SARS-CoV-2 and immunogenic GWAS profiling in host cells of COVID-19 in Vietnam*. BMC Infectious Diseases, June 2022.
3. Trong-Nhan N. Le, Van-Khanh Tran, Thu-Thuy Nguyen, Nam S. Vo, **Tham H. Hoang**, Hoang-Long Vo, Thanh-Hai T. Nguyen, Phuoc-Dung Nguyen, Viet-Tien Nguyen, Thanh-Van Ta and Huy-Thinh Tran. *BRCA1/2 Mutations in Vietnamese Patients with Hereditary Breast and Ovarian Cancer Syndrome*. Genes, January 2022.
4. Y Zhao, S Piekos, **T Hoang**, DG Shin. *A Framework using Topological Pathways for Deeper Analysis of Transcriptome Data*. BMC Genomics, March 2020.
5. **T Hoang**, Yue Z, Y Lam, S Piekos, YC Han, C Reilly, P Joshi, SH Hong, CO Sung, C Giardina, and DG Shin: BioTarget: *A Computational Framework Identifying Cancer Type Specific Transcriptional Targets of Immune Response Pathways*, Scientific Reports, June 2019.
6. Y Zhao, **T Hoang**, P Joshi, SH Hong, C Giardina, DG Shin: *A route-based pathway analysis framework integrating mutation information and gene expression data*. Methods, July 2017.
7. Y Zhao, **T Hoang**, P Joshi, SH Hong, DG Shin: *Deep Pathway Analysis Incorporating Mutation Information and Gene Expression Data*: BIBM 2016:260-265.

PhD thesis

Exploring Targets of Transcription Factors in Cancer Signaling Pathways, July 2018.

Posters

1. Li Wang, **T Hoang**, Jun Zhu. *Differential connectivity analysis identifies IDO1 as a putative regulator in Dengue virus infection*. The Human Immunology Project Consortium (HIPC) of NIH annual meeting, July 2019.
2. **T Hoang**, P Joshi, SH Hong, DG Shin. *A Bitwise Encoding Scheme Designed to Improve the Speed of Large Scale Gene Set Comparison*. VEF Fellows and Scholars Conference, March 2016.

Invited Talk

1. AI applications in genetic testing. AI4VN Conference by Vietnam Ministry of Science and Technology of Vietnam, September 2023. [AI4VN](#)
2. MCB PSM Professional Development Seminar, Department of Molecular and Cell Biology, UConn, 2020 - 2022. <https://mcb.uconn.edu/seminars/>.

Working Experience

Senior Bioinformatician

April 2022 - present

GeneStory JSC., Hanoi, Vietnam.

1. Building multiple deep learning models to assess polygenic risk scores of traits and common diseases
2. Design data platform on cloud to train, test and validate machine learning models.
3. Co-PI of the project for building clinical annotation tools for pharmacogenomics in cancer (VINIF 2023-2025), key members of two projects ([VINIF.2021.DA00171](#) Big Data Platform 2021-2023 and [VINIF.2020.DA02](#) Self-design SNP chip and method of computing risk scores for common diseases in Vietnam 2020 - 2023).

Senior Bioinformatician

April 2021 - April 2022

Big Data Institute of Vingroup, Hanoi, Vietnam.

1. Setup pipeline for processing data of Covid-19, Nutrition genomics and other related genetics
2. Patent application

Data Scientist

July 2018 - July 2021

Mount Sinai Genomics Inc. (d/b/a Sema4, now GeneDx), Stamford, Connecticut, USA.

1. A study on the first therapeutic cancer vaccine in Prostate cancer (Sipuleucel - T) with flow cytometry, PBMC (cytof), and wholeblood RNA-seq
2. Transcriptomic immune profiling of SARS-CoV-2 and other viral infections: From meta-analysis to interaction networks w/ RNA-seq, luminex, mass cytometry data

Research Assistant

June 2014 - June 2018

Shin lab, College of Engineering, University of Connecticut, Storrs, CT.

1. Exploring Target Genes of Transcription Factors in Cancer Signaling Pathway: Incorporating ChIP-seq binding profiles of transcription factors and RNA-seq into data mining model to build novel computational tools. It is very useful tool for investigating disease-specific features (e.g., cancer, liver fibrosis).
2. Pathway Enrichment Analysis on Liver Fibrosis gene expression profiles: Identifying and characterizing biomarkers in pathway analysis to visualize the gene expression profiles and machine learning model in classification for various types of liver injury.

Co-Founder, Web Developer

2011 - 2013

Skyline Software Ltd., Hanoi, Vietnam.

1. Developed extensions (e.g, modules, components and plugins) for Joomla websites.
2. Developed and maintained websites (outsourcing) for Horizons Inc. marketing group, located in Cleveland, OH.

Technical Skills

1. Programming: R, Python, Shell, Java, PHP, MPI, JavaScript, CSS, HTML.
2. Bioinformatics tools: GSEA, Salmon, KEGG, Wiki Pathways, Bowtie, Samtools, Varscan, PARADIGM.
3. Databases: Oracle SQL, MySQL, SQL Server
4. Others: Cytoscape JS, RStudio, TACC Stampede, SAS, Minitab