

# THOMAS HOANG

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## EDUCATIONAL BACKGROUND

Denison University, Granville, OH

Expected Graduation: May 2025

**Bachelor of Sciences, Computer Science, and Mathematics**

Denison Alumni Award (2021), Anderson Science Scholar Award (2022), Crown Fellowship Award (2023), Conrad E Ronneberg Scholarship (2024), John & Mary Alford Scholar (2024).

### Recommendations:

--- Prof. Duncan Buell (Chair Emeritus — NCR Chair in Computer Science and Engineering, **University of South Carolina**, Email: [buell@acm.org](mailto:buell@acm.org)).

--- Prof. Ashwin Lall (Chair — Computer Science and Mathematics, **Denison University**, Email: [lalla@denison.edu](mailto:lalla@denison.edu)).

--- Associate Prof. David White (Computer Science and Mathematics, **Denison University**, Email: [whiteda@denison.edu](mailto:whiteda@denison.edu))

--- Assistant Prof. Truex Stacey (Suzanne B. & Theodore A. Bosler Endowed Faculty Fellowship — Computer Science and Mathematics, **Denison University**, Email: [truexs@denison.edu](mailto:truexs@denison.edu)).

## PUBLICATIONS

- Thomas Hoang. "GNN: Graph Neural Networks and Large Language Models for Data Discovery" (GNN, LLM, Data Mining, Data Systems, Data Markets, Data Science/Analytics)
- Thomas Hoang. "PLOD: Predictive Learning Optimal Data Discovery" (Data Mining, Database, Data Systems, Data Markets, Data Science/Analytics)
- Thomas Hoang. "BOD: Blindly Optimal Data Discovery" (Data Mining, Database, Data Systems, Data Markets)
- Thomas Hoang, Kahf Hussain, Minh Nguyen, Dagmawi Zerihun, Ashwin Lall. "Non-linear Indistinguishability Query" (Data Processing, Database, Data Systems, Analytics)
- Thomas Hoang, Quynh Anh Nguyen, Hoang Long Nguyen. "Public Health in Disaster: Emotional Health and Life Incidents Extraction during Hurricane Harvey" (Graph, LDA, LLM)

## POSITIONS OF RESPONSIBILITY

- Reviewer: Reviewed submissions for the ACM International Conference on Information and Knowledge Management (CIKM), ensuring quality and rigor of research papers presented at conference. (Big Data, Machine Learning)

## WORK AND RESEARCH EXPERIENCES

### Research Intern

May 2024 - August 2024

Climate Change Health Intelligence lab, Louisville, KY

- Created and implemented BERT-based and LDA models for analyzing over 400,000 tweets during Hurricane Harvey, improving data analysis and machine learning processes. (NLP, LDA Topic Modeling, BERT model)
- First-authored two publications, demonstrating expertise in AI/ML and mathematics, and contributing to disaster impact analysis. (Knowledge Graph, GNN, LLM)

### Data Engineer Intern

May 2023 - August 2023

(Costco Wholesale) FPT Americas, Richardson, Texas, United States

- Implemented data manipulation operations, including joins, sub-queries, aggregations, and stored procedures, contributing to improved data processing and analysis. (SQL Server)
- Organized and processed large volumes of data, ensuring data quality, security, and compliance. (Azure Synapse Analytics)

### Anderson Undergraduate Researcher

May 2022 - August 2022

Denison University "Non-linear Indistinguishability Query"

- First-authored a publication in designing multi-criteria decision-making algorithms to narrow down a large database of over a million items to select a few optimal items. (Database Query Processing Algorithms)
- Generalized query processing algorithm to a broad set of three functions, including convex, concave, and CES. (Polynomials, Exponential, Logarithmic Functions)
- Approximated user's utility functions to a reasonable degree of precision, using artificial tuples with provable bounds, by asking more questions on interactive phases. (C++, Python)

### Research Assistant

May 2020 - May 2021

The University of Tartu, Tartu, Estonia

- Conducted research on the "Subordinate And Supervisor Relationship Through the Lens of Guanxi: First Empirical Research in Vietnam" publication, supervised by Dr. Quan Hoang Nguyen Tran. (Economics and Business Administration)

- Fulfilled 100% KPIs with quality and quantity of collecting data from different types of employment, including C-levels, managers, and employees, and making judgments in analysis. (Leadership, Teamwork, Communication)

### **Software Engineer Intern**

October 2020 - March 2021

(FVille), FPT Software, Hanoi, Vietnam

- Designed one complete website with a database and APIs among layers, satisfying integration model, security, and repository design pattern. (.NET Framework, C#, OOP, Javascript, HTML5, CSS3, Bootstrap, Fluent API, Design Pattern, unit test, SQL Server)
- Developed one web-based application followed by web service and layered architecture based on MVC. (ASP. NET MVC)

### **TECHNICAL SKILLS**

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- Programming Languages: C/C++ | C# | Python | SQL | R | Javascript.
- Database: SQL Server | Azure SQL.
- Mathematics and Algorithms: Non-linear Algorithms | Advanced Data Structures And Algorithms | Time Series Analysis.
- Others: ASP MVC | .NET framework | Fluent API | LINQ method | Design Pattern | Unit Test skills | Low-Code Outsystems.

### **RELEVANT COURSEWORK**

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- **Denison University:** Non-Linear Indistinguishability Query (*Independent Research*), Data Systems, Software Engineering, Advance Algorithm Designs, Time Series Analysis, Linear Algebra, Applied Statistics, Cryptography.
- **Self-learning Skills:** Vector Database, Machine Learning, LDA Topic Modeling, Bert Models, Knowledge Graphs, Data Engineering Azure, .NET Software Engineering.

### **ACTIVITIES**

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Chess (*Elo About 2100*), Scuba Diving (*Open Water*), Boxing, Soccer, Reading Philosophy and Psychology Books.