

# Hieu Tran

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## RESEARCH INTERESTS

My primary research interest is enabling LLMs to understand, generate, and reason about human language to enhance their ability to perform complex cognitive and language-related tasks. Recently, I have expanded my work to advanced topics such as Reinforcement Learning and Test Time Computing, with a particular emphasis on improving the reasoning capabilities, factual accuracy, and efficiency of language models in both general and domain-specific applications.

## EDUCATION

### University of Massachusetts, Amherst (UMass)

Computer Science PhD student

- CPA: 3.94/4.0

Aug. 2022 - now

Massachusetts, USA

### Hanoi University of Science and Technology (HUST)

Engineer's Degree in Computer Science

- CPA: 3.6/4.0 (top 1.3%), graduated with Excellent Degree

Aug. 2014 - Aug. 2019

Hanoi, Vietnam

### Bien Hoa High School for The Gifted

Specialized in Informatics

Sep. 2011 - Sep. 2014

Hanam, Vietnam

## RESEARCH EXPERIENCE

### Computer Science PhD student

BioNLP lab (<https://bio-nlp.org>)

- Advisor: Prof. Hong Yu ([google scholar](#))
- Research Topic: Large Language Models for Medical

Aug 2022 - now

Massachusetts, USA

### Research Intern

United Imaging Intelligence (<http://www.uui-ai.com>)

- Supervisor: Dr. Weijing Huang ([google scholar](#))
- Working on fact-checking of LLMs responses

May 2024 - Aug 2024

Boston, USA

### AI Research Resident

VinAI Research ([www.vinai.io](http://www.vinai.io))

- Supervisor: Prof. Thien Huu Nguyen ([google scholar](#))
- Research Topic: Information Extraction

Nov 2019 - Jun 2022

Hanoi, Vietnam

### Applied Rotation Program

VinAI Research

- Supervisor: Dr. Duy Tin Vo ([google scholar](#)), Dr. Dat Quoc Nguyen ([google scholar](#))
- Working on knowledge-based question answering and machine translation problem

May 2021 - Sep 2021

Hanoi, Vietnam

## PUBLICATIONS

### Chatbot To Help Patients Understand Their Health

2025

Won Seok Jang\*, **Hieu Tran\***, Manav Mistry, SaiKiran Gandluri, Yifan Zhang, Sharmin Sultana, Sunjae Kwon, Zonghai Yao, Hong Yu

Proceedings of EMNLP 2025 (Findings)

### RARE: Retrieval-Augmented Reasoning Enhancement for Large Language Models

2025

**Hieu Tran**, Zonghai Yao, Junda Wang, Yifan Zhang, Zhichao Yang, Hong Yu

Proceedings of ACL 2025

### SemiHVision: Enhancing Medical Multimodal Models with a Semi-Human Annotated Dataset and Fine-Tuned Instruction Generation

### BioInstruct: Instruction Tuning of Large Language Models for Biomedical Natural Language Processing

2024

**Hieu Tran**, Zhichao Yang, Zonghai Yao, Hong Yu

Journal of the American Medical Informatics Association, ocae122

### Readme: Bridging medical jargon and lay understanding for patient education through data-centric nlp

2023

Zonghai Yao, Nandyala Siddharth Kantu, Guanghao Wei, **Hieu Tran**, Zhangqi Duan, Sunjae Kwon, Zhichao Yang, Hong Yu

Proceedings of EMNLP 2024 (Findings)

**A Vietnamese-English Neural Machine Translation System** 2022

*Thien Hai Nguyen, Tuan-Duy H. Nguyen, Duy Phung, Duy Tran-Cong Nguyen, Hieu Minh Tran, Manh Luong, Tin Duy Vo, Hung Hai Bui, Dinh Phung, Dat Quoc Nguyen*

Proceedings of InterSpeech 2022 - Show & Tell Demonstrations

**Exploiting Document Structures and Cluster Consistencies for Event Coreference Resolution** 2021

*Hieu Tran, Duy Phung, Thien Huu Nguyen*

Proceedings of ACL-IJCNLP 2021 (oral presentation)

**Learning Cross-lingual Representations for Event Coreference Resolution with Multi-view Alignment and Optimal Transport** 2021

*Duy Phung, Hieu Tran, Thien Huu Nguyen*

Proceedings of the first Workshop on Multilingual Representation Learning (MRL 2021) at EMNLP 2021

**Vietnamese Speech-based Question Answering over Car Manuals** 2021

*Tin Duy Vo, Manh Tien Luong, Duong Minh Le, Hieu Tran, Nhan Tri Do, Duy Nguyen, Thien Hai Nguyen, Hung Hai Bui, Dat Quoc Nguyen, Dinh Quoc Phung*

Proceedings of Data-Centric AI workshop NeurIPS 2021

**The Dots Have Their Values: Exploiting the Node-Edge Connection in Graph-based Neural Models for Document-level Relation Extraction** 2020

*Hieu Tran, Minh Trung Nguyen, Thien Huu Nguyen*

Proceedings of EMNLP 2020 (Findings)

## HONORS AND AWARDS

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**The Excellence Scholarship - Level A** 2015

*School of Information and Communication Technology, HUST*

Each semester top 5% of students with greatest academic performance are awarded

**National Excellent Student Award** 2014

*Vietnam Ministry of Education and Training*

Third prize in Informatics subject, National Excellent High School Student Contest

## ACTIVITIES

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**Technical Talk** August 2021

*AI Day 2021: Empowering Innovations – website: <https://www.vinai.io/aiday2021>*

Present at AI Day 2021 - the event which welcomed technical talks from top researchers around the world and attracted over 20,000 views online

**Invited speaker** October 2021

*Public Natural Language Processing workshop organized by VinAI Researrch.*

## CERTIFICATES

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**Deep Learning Specialization by deeplearning.ai**

- Neural Networks and Deep Learning
- Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization
- Structuring Machine Learning Projects
- Convolutional Neural Networks
- Sequence Models

## LANGUAGES

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• **Vietnamese:** Native

• **English:** Fluent

**IELTS:** Overall 7.0, Listening 7.5, Reading 8.5, Writing 6.5, Speaking 6.0