

Hieu Tran

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RESEARCH INTERESTS

My research explores mechanisms to understand human languages for computers so that computers can perform cognitive language-related tasks for us. Among others, I am especially interested in distilling structured information and mining useful knowledge from massive human-written text of various domains. I am also interested in other language-related problems with deep learning, including reading comprehension, question answering, machine translation, and natural language generation.

EDUCATION

University of Massachusetts, Amherst (UMass) <i>Computer Science PhD student</i>	Aug. 2022 - Aug 2027 <i>Massachusetts, USA</i>
Hanoi University of Science and Technology (HUST) <i>Engineer's Degree in Computer Science</i> <ul style="list-style-type: none">CPA: 3.6/4.0 (top 1.3%), graduated with Excellent Degree	Aug. 2014 - Aug. 2019 <i>Hanoi, Vietnam</i>
Bien Hoa High School for The Gifted <i>Specialized in Informatics</i>	Sep. 2011 - Sep. 2014 <i>Hanam, Vietnam</i>

RESEARCH EXPERIENCE

Computer Science PhD student <i>BioNLP lab (https://bio-nlp.org)</i> <ul style="list-style-type: none">Advisor: Prof. Hong Yu (google scholar)Research Topic: Text Generation for Health Care	Aug 2022 - Aug 2027 <i>Massachusetts, USA</i>
AI Research Resident <i>VinAI Research (www.vinai.io)</i> <ul style="list-style-type: none">Supervisor: Prof. Thien Huu Nguyen (google scholar)Research Topic: Information Extraction	Nov 2019 - Jun 2022 <i>Hanoi, Vietnam</i>
Applied Rotation Program <i>VinAI Research</i> <ul style="list-style-type: none">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 <i>Hanoi, Vietnam</i>

PUBLICATIONS

A Vietnamese-English Neural Machine Translation System <i>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</i> Proceedings of InterSpeech 2022 - Show & Tell Demonstrations	2022
Exploiting Document Structures and Cluster Consistencies for Event Coreference Resolution <i>Hieu Minh Tran, Duy Phung, Thien Huu Nguyen</i> Proceedings of ACL-IJCNLP 2021 (oral presentation)	2021
Learning Cross-lingual Representations for Event Coreference Resolution with Multi-view Alignment and Optimal Transport <i>Duy Phung, Hieu Minh Tran, Thien Huu Nguyen</i> Proceedings of the first Workshop on Multilingual Representation Learning (MRL 2021) at EMNLP 2021	2021
Vietnamese Speech-based Question Answering over Car Manuals <i>Tin Duy Vo, Manh Tien Luong, Duong Minh Le, Hieu Minh Tran, Nhan Tri Do, Duy Nguyen, Thien Hai Nguyen, Hung Hai Bui, Dat Quoc Nguyen, Dinh Quoc Phung</i> Proceedings of Data-Centric AI workshop NeurIPS 2021	2021
The Dots Have Their Values: Exploiting the Node-Edge Connection in Graph-based Neural Models for Document-level Relation Extraction <i>Hieu Minh Tran, Minh Trung Nguyen, Thien Huu Nguyen</i> Proceedings of EMNLP 2020 (Findings)	2020

HONORS AND AWARDS

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

PROJECTS

Vietnamese Speech-based Question Answering over Car Manuals

June. 2021 - Sep. 2021

Building a novel Vietnamese speech-based question answering system QA-Car Manual that enables users to ask car-manual-related questions (e.g. how to properly operate devices and/or utilities within a car). Given a car manual written in Vietnamese as the main knowledge base, we develop QA-CarManual as a lightweight, real-time and interactive system that integrates state-of-the-art technologies in language and speech processing to understand and interact with users via speech commands and automatically query the knowledge base and return answers in both forms of text and speech as well as visualization.

Vietnamese-English Machine Translation System

Jul. 2021 - Sep. 2021

Delivering a Speech-based Vietnamese-English machine translation system. Due to the limitations of Google Translate and other translation services in the Vietnamese language, we want to build a product that can translate properly from Vietnamese text documents to English documents and vice versa. My contributions included two main parts. First, I needed to collect and preprocess bilingual data from various sources. Secondly, after finetuning the model on preprocessed data, I had to deploy a real-time service based on the model and optimize all necessary resources such as processing time, GPU memory, etc.

ACTIVITIES

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 Researsh.

TECHNICAL SKILLS

Programming: Python (proficient), Java, MATLAB (Familiar)

Libraries: Pytorch, TensorFlow, Numpy, Matplotlib, Transformers, etc.

Developer Tools: Git, Docker

CERTIFICATES

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

• **Vietnamese:** Native

• **English:** Fluent

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