

# Minh Tran

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<https://minhtcai.github.io>

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## Education

**Carnegie Mellon University**, School of Computer Science  
MSc in Computer Vision  
Advisor: Prof. Matthew O'Toole. *GPA: 4.0.*

Pittsburgh, PA  
2022 – 2023

**Linköping University**, Institute for Analytical Sociology  
Exchange Studies - Social Networks Analysis

Linköping, Sweden  
2018 – 2018

**DePaul University**, Jarvis School of Computing  
MSc in Data Science  
Advisor: Prof. Jacob Furst. *GPA: 3.83.*

Chicago, IL  
2016 – 2018

**Foreign Trade University**, Information Science Center  
BBA in E-Commerce System  
Advisor: Prof. Hung Nguyen. *GPA: 3.31.*

Hanoi, Vietnam  
2011 – 2015

## Research Experience & Selected Projects

**Meta Reality Labs - Capstone:** [Active Learning for Multi-view Part Segmentation](#).

Jan. 2023 - Dec. 2023

Advisors: He Wen, Yuan Dong, Prof. Deepak Pathak - Partner: Ashwin Vaswani

- Implementing Active Learning with Viewpoint Entropy for Human Part Segmentation using Multi-view Data. This method reduced annotation cost up to 80% while maintaining the same model performance.
- Generated a multi-view dataset of human segmented parts focusing on hard poses. The dataset contains 20 subjects, 50 poses with 10 views each, 500000 images in total. It is the first hard-pose synthesized dataset.

**CMU Light Transport Lab** - DiffuserCam: Lensless Single-exposure 3D Imaging.

Jun. 2023 - Dec. 2023

Advisor: Prof. Matthew O'Toole

- Implementing lensless camera used to capture 3D structures effectively using method from DiffuserCam.
- Teaching assistant for 16-385: Computer Vision

**CMU Biorobotics Lab** - On-orbit Surface Inspection.

Jun. 2023 - Sep. 2023

Advisor: Dr. Geordan Gutow

- Implemented a soft method to narrow down gas leak localization using ultrasonic for non-flat surfaces.
- Implemented a trajectory optimization method that minimized information loss due to perception models.

## Selected Projects

See my projects at <https://minhtcai.github.io>

- [Multi-modal Meta-learning for Federated Tasks](#). **Github**
- [Structured Light for Fruits Freshness Prediction](#). **Github**
- [Negative Co-Learning: A Case of Harmful Learning](#). **Github**
- [Meta Learning for Few-Shot Medical Text Classification](#). **arXiv**

## Technical Skills

**Proficient:** Python, C++, Darknet, Pytorch, Tensorflow, AWS, GCP, Azure, LaTeX.

**Prior Experience:** JavaScript, R, Matlab, SQL, Java, Hadoop, Spark, SAS, SPSS, Scala, Tableau, Gephi.

## Professional Experience

See my full job responsibility at <https://minhtcai.github.io/data/minh-resume.pdf>

### Actuate AI

Nov. 2018 - Jan. 2022

Sr. Data Scientist

New York City, NY

- Built real-time object detection (YOLO, SSD, EfficientDet), segmentation (YOLACT++), activity recognition (OpenPifPaf), tracking (DeepSort), structure from motion (OpenSfM) models for large-scale CCTV systems. Models were deployed on more than 15000 cameras.
- Designed and built end-to-end autonomous CI/CD pipeline for data collection and verification, model re-train, compile, re-test and re-deploy. The pipeline reduced the workload of data science team by 50% and up to 70% inference cost, impacting all machine learning products.
- Customized and integrated new research into CCTV applications including test-time augmentation, background subtraction, multi-channel training and many more. Optimized inference models for SaaS pipeline and edge devices, deployed models on iOS and Android.
- Designed database and internal library for data management and integrated to analytical platform.

### Veda Grace Dermatology

Jul. 2018 – Jan. 2019

Data Scientist

Chicago, IL

- Built and deployed image processing pipeline to process and extract skin surface features for dermatology.
- Built classification model based on ResNet to detect skin diseases and researched the combination methods of ingredients for each disease.

## Talks and Tutorials

Ensemble Learning with Tree-based Models - Chicago Machine Learning Hackathon.	2018
Hadoop and Spark on AWS - DePaul Data Hacking Hour.	2018
Intro to Deep Learning - DePaul Data Hacking Hour.	2017
Data Science & Tech Startup - Electronic Commerce Club FTU.	2017

## Honors and Awards

First Prize & Best in Show - hackAuton CMU (Team: Patient Safety)	2023
Demo - McKinsey Digital Hackathon New York (Team: CPC4)	2023
First Prize - AWAP CMU Algorithms Hackathon (Team: IDC)	2023
Third Prize - Edward L. Kaplan, '71, New Venture Challenge (Employer: Aegis AI)	2019
Finalist - MARS Hackathon Chicago (Team: DePaul)	2018
Second Prize - Bosch & KPMG Mobility Hackathon Chicago (Team: Amber)	2018
Computer Training Institute of Chicago Full Scholarship	2018
First Prize - Young Entrepreneurs & Sustainability Education Hack (Team: Pupa)	2015
FTU Excellence Student Scholarship	2015
Second Prize - Hanoi Startup Weekend (Team: Beeketing)	2014

## Extra Activities

Summer of Quantum (SoQ) Short Course - Laboratory for Physical Sciences University of Maryland	2022
Quantum Computing and Intelligence Workshops - Vietnam National University	2022
Summer School on Cognitive Robotics - University of Southern California	2019