

Education

Sept.2020– **University of British Columbia.**

Present *MSc in Computer Science*

GPA: 97.2%

Major Scholarships: NSERC CGS-M (\$17,000), BCGS (\$15,000)

Advisor: Professor Helge Rhodin

Areas of Interest: Machine Learning, Deep Learning, Computer Vision, 3D Vision, 3D Pose Estimation

2015 – 2020 **University of Manitoba.**

BSc in Electrical Engineering with Distinction

Faculty of Engineering Medal in Electrical Eng., President Scholar, Dean's Honor List

GPA: 4.47/4.50

Concentration: Power and Energy Systems Engineering

Capstone Project: "Smart DC Solar Lighting Enclosure for Microgrid Applications"

Publications

NeurIPS 2021 **A-NeRF: Surface-free Human 3D Pose Refinement via Neural Rendering.**

*Shih-Yang Su, **Frank Yu**, Michael Zollhoefer, Helge Rhodin*

Paper

CVPR 2021 **PCLs: Geometry-aware Neural Reconstruction of 3D Pose with Perspective Crop Layers, Poster.**

***Frank Yu**, Mathieu Salzmann, Pascal Fua, Helge Rhodin*

Paper | Code

ECCV 2020 **Few-Shot Scene-Adaptive Anomaly Detection, Spotlight Paper.**

*Yiwei Lu, **Frank Yu**, Mahesh Kumar Krishna Reddy, Yang Wang*

Paper | Code

Research Experience

Apr.2020– **Visiting Researcher at University of British Columbia.**

Sept.2020 **Supervisor: Professor Helge Rhodin**

- Research focused on improving state-of-the-art performance in 3D human pose estimation
- Investigated the potential shortcomings of Spatial Transformer Networks (STNs) and how to overcome them using a combination of deep learning and traditional computer vision techniques
- Designed and conducted experiments to evaluate the effectiveness of removing perspective distortions from input modalities.

Sept.2019– **Undergraduate Research Assistant at University of Manitoba.**

Mar.2020 **Supervisor: Professor Yang Wang**

- Trained an anomaly detection model to detect people falling in RGB-D data
- Created a custom data loader for performing meta-learning training
- Implemented, trained, and tested a meta-learning approach for scene adaptive anomaly detection in videos

Summer 2019 **NSERC Undergraduate Research Assistant.**

Supervisor: Professor Ahmed Ashraf

- Researched different methods and objective functions for anomaly detection using generative adversarial networks (GANs)

Teaching Experience

Summer 2021 **TA for CPSC 340 - Machine Learning and Data Mining.**

- Led and created materials for weekly and final exam tutorials to further examine and clarify topics taught throughout the course. Assisted in grading course assignments and the final exam.

Coursework/Projects

Fall 2020 **CPSC 533R - Topics in Computer Graphics/AI, Grade: 96%.**

- Focused on state-of-the-art and influential contributions to the fields of computer vision and graphics using deep learning
- **Course Project:** Leveraged course knowledge and current SOTA research to develop and train a model to perform physically accurate video prediction using VAEs and contrastive learning.

Winter 2021 **CPSC 532S - Topics in Artificial Intelligence, Grade: 100%.**

- Focused on applying state-of-the-art deep learning techniques (CNNs, GANs, and Transformers) on multimodal data using PyTorch
- **Course Project** Designed and implemented a pipeline that uses transformers, CNNs, and GANs to generate sign language videos given a multilingual natural language input

Select Scholarships

2020	NSERC Canada Graduate Scholarship - Master's Program	\$17,500
2020	British Columbia Graduate Scholarship (BCGS)	\$15,000
2017 - 2019	NSERC Undergraduate Research Award	\$27,000
2016 - 2017	University of Manitoba Retention Scholarship	\$8,000
2019	Leonard A. Bateman Scholarship for Electrical Engineering Power Option	\$7,225
2018	Ernest M. and Margaret Scott Memorial Scholarship	\$5,500
2018	Grettir Eggertson Memorial Scholarship	\$3,800
2016 - 2018	President Scholarship	\$3,000
2015	UM Queen Elizabeth II Entrance Scholarship	\$3,000
2016 - 2018	UMSU Scholarship	\$2,200
2016	Isbister Scholarship in Engineering	\$2,075
2017	Faculty of Engineering Centenary Scholarships	\$2,000
2019	MSBI Scholarship Fund	\$1,425

Honors and Awards

2020	Faculty of Engineering Medal in Electrical Engineering	
2019	IEEEExtreme 24-Hour Programming Competition	1st U of M/6th Canada
2019	IEEE Winnipeg Section Prize for B.Sc. Design Project	3rd Place
2018	IEEEExtreme 24-Hour Programming Competition	1st U of M/12th Canada
2018	Canadian Engineering Competition - Debate	5th Place
2018	Western Engineering Competition - Debate	2nd Place
2017	IEEEExtreme 24-Hour Programming Competition	2nd U of M/17th Canada