

# Quanzhou Li

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## Education Background

University of Toronto Sep. 2018 – Jun. 2020

Honours Bachelor of Science with *High Distinction*

Major in Computer Science; Minor in Math

GPA: 3.82/4.00

Beihang University

Aug. 2016 – Jul. 2018

Bachelor of Engineering

Major in Computer Science; Double-Major in Math

GPA: 3.83/4.00

Standardized Examination: GRE:325 (V155+Q170)+AW3.5

## Paper

Haoyu Xiong, **Quanzhou Li**, Yun-Chun Chen, Homanga Bharadhwaj, Samrath Sinha, Animesh Garg. “Learning by Watching: Physical Imitation of Manipulation Skills from Human Videos”. IROS 2021.

Project: <https://www.pair.toronto.edu/lbw-kp/>

## Internships

Game Engine Developer

Archosaur Games, Beijing

May 2021 – Aug. 2021

- Implemented a rendering pipeline with functionalities including rasterizing, lighting, texture mapping, and shadow mapping without graphics API from scratch (programming test).
- Implemented a simple skeleton animation player.
- Developed 3D game engine functionalities and tools based on Unreal Engine 4, including web browsing, video recording, and game property modifying within games.
- Optimized the 3D game engine for performance.
- Maintained the 3D game engine for our games.

Full Stack Programmer

Dynamic Graphic Project Lab, University of Toronto

Advisor: Prof. Ishtiaque Ahmed

May. 2019 – Aug. 2019

- Learned Python Flask Framework and developed a Web Application for Smart City Data Visualization project.
- Implemented functionalities of creating and storing accounts, data visualization, making posts and comments, and sharing with twitter and Facebook.

## Research Experiences

People, AI and Robotics Group (PAIR), University of Toronto

Focus: Computer Vision, Imitation from Observation, Reinforcement Learning

Advisor: Prof. Animesh Garg

Mar. 2020 – Mar. 2021

- Self-studied Stanford CS234 and Berkeley CS294 reinforcement learning courses.
- Proposed and implemented an approach of physical imitation from human videos for robot manipulation tasks with group members. The performance of our method beats the state-of-the-art models in our experiments.
- Implemented AVID and GAIL-based reward learning models as baselines to compare with our method.
- Wrote our work with group members. The work was accepted to IROS 2021, and the project website can be found at <https://www.pair.toronto.edu/lbw-kp/>.

Faculty of Applied Science & Engineering, University of Toronto

Machine Learning and Energy Consumption in a Built Environment (Yearly Capstone Project)

Advisor: Prof. Scott Sanner

Aug. 2019 – Apr. 2020

- Participated in the collection, processing, and analysis of the surface temperature data in the Greater

Toronto Area, which were derived from the LiDAR and satellite datasets.

- Developed a GIS application with Pix2Pix algorithm to predict Urban Heat Island effect (surface temperature) in the Greater Toronto Area.
- Achieved the translation of the satellite images to heat maps by using the application with an error of less than 1 °C on the heat maps.
- Proposed and surveyed the improvement method and feasibility of the model.

#### **State Key Laboratory of Software Development Environment, Beihang University**

#### **Research on Chinese Machine Reading Comprehension and Question-answering Based on Deep Learning**

*Advisor: Prof. Rong Ding*

Jul. 2018 – Aug. 2018

- Completed the cleaning and statistical analysis of the Chinese reading comprehension dataset from the Baidu Research Open-Access Dataset and analyzed the potential influencing factors.
- Labeled data for training, validating, and testing.
- Participated in the implementation of the reading comprehension model by improving the network structure/attention mechanism based on the model of RNET and BDAF.

#### **Institute for Interdisciplinary Information Sciences, Tsinghua University**

#### **Towards Optimized Compilation of NFs to Programmable Switch**

*Advisor: Prof. Wenfei Wu*

Apr. 2018 – Jul. 2018

- Participated in the development of an optimized compilation of policy intent to a programmable pipeline switch implementation.
- Participated in the research on a heuristic algorithm based on the genetic and greedy algorithm to avoid consuming unacceptable runtime of ILP caused by its complex searching space.
- Researched on the time efficiency and performance of integer programming models and heuristic algorithm.

#### **Key Major Courses**

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|--|-----------|
| • CSC418 Computer Graphics                       | Grade: A  |
| • CSC384 Introduction to Artificial Intelligence | Grade: A  |
| • CSC311 Introduction to Machine Learning        | Grade: A  |
| • CSC412 Probabilistic Machine Learning          | Grade: A+ |
| • CSC413 Neural Networks and Deep Learning       | Grade: A+ |

#### **Others**

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**Technical skills:** C/C++, Python, Julia, Java, Unreal Engine 4, OpenGL, TensorFlow, JavaScript

#### **Honors:**

- ✓ College Silver Medal, St. Michael's College, University of Toronto, 2020
- ✓ Dean's List Scholar, Faculty of Arts & Science, University of Toronto, 2020
- ✓ Dean's List Scholar, Faculty of Arts & Science, University of Toronto, 2019
- ✓ Yuanhang Scholarship, Beihang University, 2018
- ✓ Committee Member of the 5<sup>th</sup> Qiming College Student Congress, 2017-2018
- ✓ Third Prize in Mathematics Competition, Beihang University, 2017
- ✓ Being selected to be an Honors Student at Shenyuan Honors College (Top 5%) 2017
- ✓ Excellent Camper, Beihang New Talents Training Camp, 2016
- ✓ Gold Prize, International Youth Innovation Design Competition, 2014

**Hobbies:** Piano, Skiing, Music & Movies