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: IELTS: 7.5 (R9.0+L6.5+S8.0+W6.0) GRE:325 (V155+Q170)+AW3.5

Research Interests

- Robotics and robot learning (Primary)
- Machine learning and reinforcement learning (Secondary)

Research Experiences

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

Focus: Robotics, Imitation from Observation, Unsupervised Representation Learning

Advisor: Prof. Animesh Garg Mar. 2020 – Present

- Self-studied Stanford CS234 and Berkeley CS294 reinforcement learning courses.
- Proposed and implemented an approach for 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 and submitted it to ICRA 2021.
- Working on an extension of our work.

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.
- Proposed and surveyed different alternatives of implementing our methods of the application development.
- Developed a GIS application with pix2pix algorithm to predict Urban Heat Island effect (surface temperature) in Greater Toronto Area.
- Achieved the translation of the satellite images to heat maps by using the application with an error of around 1°C on the heat maps.
- Proposed and surveyed the improvement method and feasibility of the model.

Dynamic Graphic Project Lab, University of Toronto

Smart City
Advisor: Prof. Ishtiaque Ahmed May. 2019 – Aug. 2019

- Developed a Web Application for Smart City Data Visualization with JavaScript
- Implemented the database of creating and storing accounts, data visualization, making posts and comments, and sharing with twitter and facebook.

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

- Extracted text features by using classic NLP methods, such as text matching, similarity calculation, named entity recognition, and realized multi-dimensional feature combination
- Participated in the improvement of the reading comprehension model by improving the network structure / Attention mechanism based on the model of RNET and BIDAF.

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

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". ICRA 2021 *under review*. Project: https://www.pair.toronto.edu/lbw-kp/

Key Major Courses

- CSC384 Introduction to Artificial Intelligence
- CSC311 Introduction to Machine Learning
- CSC412 Probabilistic Machine Learning
- CSC413 Neural Networks and Deep Learning
- CSC401 Natural Language Processing
- CSC418 Computer Graphics

Others

- **Technical skills:** C, C++, Python, Julia, Jav, PyTorch, TensorFlow, robosuite, gym, dm_control, HTML, CSS, JavaScript, Android Studio
- **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 5th 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, Music & Movies