William Qi

Curriculum Vitae

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Education

Carnegie Mellon University — *Pittsburgh, PA*

M.S. in Robotics — *Sep. 2018 - Sep. 2020*

University of British Columbia — *Vancouver, BC*

B.Sc. Honours in Computer Science — *Sep. 2013 - Apr. 2018*

- GPA: 3.9/4.0
- Thesis: "Zero-Shot Super-Resolution for Images and Video" (Advisor: Prof. Jim Little)
- Received Dean's Honour List distinction during every term enrolled (80%+ average).
- Awarded Science Scholar distinction and Trek Scholarship for academic performance (top 5%).

University Transition Program — *Vancouver, BC*

Early Entrance to University — *Sep. 2011 - Jun. 2013*

- Completed five years of secondary education in two years as one of 20 students in a rigorous, highly-accelerated program.
- Entered UBC as one of the youngest undergraduate students at age 15.

Research Experience

Zero-Shot Super-Resolution for Images and Video — *Vancouver, BC*

Honours Thesis (Advisor: Prof. Jim Little) — *Sep. 2017 - Apr. 2018*

- Explored deep learning-based techniques to improve super-resolution performance in scenarios with limited training data.
- Extended the zero-shot image super-resolution method to video input, achieving state of the art results under certain conditions.
- Assessed and evaluated a variety of super-resolution methods, identifying relative strengths and weaknesses.

Wasserman Lab at The Centre for Molecular Medicine and Therapeutics — *Vancouver, BC*

Research Assistant (Advisor: Prof. Wyeth Wasserman) — *Apr. 2017 - Apr. 2018*

- Developed novel graph-based algorithms to perform sequence alignment efficiently on consumer-grade hardware.
- Contributed to the development of hardware optimized and highly parallelized bioinformatics algorithms.
- Developed biologist-friendly visual interfaces to perform sequence alignment operations.

UBC Data Science Institute — *Vancouver, BC*

Research Fellow (Advisor: Prof. Raymond Ng) — *May 2017 - Sep 2017*

- Researched transportation patterns and socioeconomic impacts of transportation availability in suburban areas.
- Developed a novel graph model for bus networks, enabling demand/capacity analysis in any region using only openly available data.
- Extracted commuter transportation patterns and identified problematic areas through analysis of geo-tagged data generated by Twitter users.
- Presented findings and results to transit agencies and as a poster at the Cascadia Innovation Corridor Conference in Seattle.

Industry Experience

Xiaozhuan Technology — *Beijing, China*

Co-Founder and Engineering Lead — *Feb. 2016 - Apr. 2017*

- Co-founded a Chinese market tech startup with a mission to improve real estate viewings using 3D reconstruction in virtual reality.
- Raised over 2 million RMB of venture capital and was accepted into Tsinghua University's accelerator program.
- Led team of developers responsible for development of customer-facing interfaces.
- Contributed to the creation of a distributed pipeline to stitch 3D models of scanned environments using collected RGBD data.
- Developed a VR-compatible 3D web player using three.js, serving thousands of users globally on WeChat and in the browser.
- Implemented deep learning-based models to facilitate automated colour balance and scene tagging for panoramas.

Microsoft

Vancouver, BC

Software Engineering Intern

Apr. 2016 - Aug 2016

- Developed a mobile application with an object detection component in partnership with the OneNote Education team.
- Contributed to the design and development of a Win32 PowerPoint feature using C++ and Node.js.
- Established automated build/test framework for API servers with VSTS integration.
- Built Node.js API server with secure communication over web sockets and SOAP.

Broadcom

Richmond, BC

Software Engineering Intern

Apr. 2015 - Dec. 2015

- Worked with the Android TV team to develop reference software for set-top-boxes, primarily using Java and C++ at the Android framework level.
- Improved automated test system with retroactive log analysis to automatically identify high-risk code changes.
- Implemented media container decoding and A/V stream parsing in Android to enable native playback of ultra high-resolution video formats.

Zenchat Interactive

Vancouver, BC

Software Engineer

Feb. 2015 - Dec. 2015

- Developed an iOS application using the React Native framework and authored internal build/test scripts using Python.
- Implemented backend data validation modules using LeanCloud and Node.js.
- Led refactoring of project to enable cross-platform support, reducing estimated development time for Android port by 60% vs. native.

Teaching

UBC Department of Computer Science

Vancouver, BC

Teaching Assistant

Sep. 2014 - Apr. 2016

- ***CPSC 110*** Computation, Programs, Programming (Winter 2014)
- ***CPSC 210*** Software Construction (Spring 2015)
- ***CPSC 313*** Operating Systems (Spring 2016)
- Received excellent TA evaluations with a median score of 5/5 across all categories.

Honours & Awards

2017-18 **Science Scholar Distinction**, University of British Columbia — *Vancouver, BC*

2013-18 **Dean's Honour List**, University of British Columbia — *Vancouver, BC*

2017 **Data Science for Social Good Fellowship**, University of British Columbia — *Vancouver, BC*

2017 **Charles and Jane Banks Scholarship**, University of British Columbia — *Vancouver, BC*

2017 **Trek Excellence Scholarship**, University of British Columbia — *Vancouver, BC*

2013 **BC Achievement Scholarship**, BC Ministry of Education — *Vancouver, BC*