

Stephen Yang

stephy.yang@mail.utoronto.ca | 778-891-4659 | [Linkedin](#) | [Github](#)

EDUCATION

University of Toronto, B.ASc Computer Engineering

September 2019 – July 2024

- › Relevant Coursework: ECE241 Digital Systems, ECE342 Computer Hardware, ECE314 Power Electronics, ECE344 Operating Systems, ECE470 Robot Modelling and Control, ECE411 Real Time Computer Control, ECE552 Computer Architecture
- › Dean's Honor List Fall 2019, Fall 2020, Winter 2021, Winter 2022. **CGPA: 3.70**
- › Thesis: **PARKore: Parallel, Asynchronous, Relaxed K-Core Decomposition**
- › Relevant Skills: **Modelsim, SystemVerilog/Verilog, VCS, tcl, PLECS, C/C++/Python3, ROS2, PyTorch**

University of British Columbia, Math 200 – Calculus 3 (Dual Enrollment/Access Studies)

September 2018 – December 2018

EXPERIENCE

Intel Programmable Solutions Group – IPSE Hardware Engineering Intern

May 2022 – September 2023

- › Hardware engineering PEY intern on the Memory Subsystems/High Bandwidth Memory team, within the IP Solutions Engineering team mainly focused on developing IP for Intel Agilex and Stratix series **FPGA**'s.
- › Designed RTL code in **System Verilog** for Memory Subsystems IP's and the Intel High Bandwidth Memory (HBM) IP. Debugged IP functional and timing issues using **Modelsim** and **VCS**. Wrote scripts in **tcl** and **perl** to enable Intel IP's in **Quartus**.
- › Improving automated testing and expanded testing scope for Intel High Bandwidth Memory (HBM) IP on Intel Agilex 7 devices.
- › Enabling hardware board testing for Intel Oak Springs Canyon IPU (Infrastructure Processing Unit) and Intel Agilex 7 FPGA's.

aUToronto – Behaviour Planning Team Member

November 2022 – August 2023

- › Planning team member for aUToronto, UofT's self-driving car team. Developed a behaviour planner algorithm which processes sensor data (object detection, traffic light sensing) as well as mapping data and selectively calls the other sub planners, namely Global Planner (trip planning) and Local Planner (local route planning).
- › Developed **C++** code for the **ROS2** planning stack. Wrote unit tests using **GTest**.

University of Toronto Multimedia Lab – Undergraduate Researcher

May 2021 – August 2021

- › Researched two separate projects in computational pathology (Data Collection Campaign project and HistoKT project).
- › *Data Collection Campaign*: Continued development on a proprietary web-based annotation tool for Computational Pathology (CPath).
- › Streamlined the dataset labelling process in computational pathology. Migrated existing **LAMP** stack to run in **Docker**. Developed a **Python Flask** backend to process large medical data (Whole Slide Images) asynchronously. Implemented a task queue using **Celery** and **RabbitMQ** to expedite image processing (background cropping, model predictions and patch triaging) on data.
- › *HistoKT*: First author on a paper accepted to ICASSP 2022 on data-centric approaches to Transfer Learning in computational pathology.

University of Toronto Hyperloop Team – Pod II R&D LIM Lead

November 2019 – February 2023

- › Previously led a team of 13 engineers focusing on LIM (Linear Induction motor) and TFLIM electric drive design. Worked on developing an advanced contactless propulsion and levitation system for implementation in future hyperloop pods.
- › Performed **FEA** simulations using **ANSYS Maxwell**, **Simcenter MagNet** and **FEMM** for electromagnetic levitation/propulsion devices including Halbach Arrays, Linear Halbach Drive, Electrodynamic wheels, DLIM (Double-Sided LIM) and TFLIM (Transverse Flux LIM).

PUBLICATIONS

- › Mahdi S. Hosseini, Babak Ehteshami Bejnordi, Vincent Quoc-Huy Trin, Danial Hassan, Xingwen (Alexander) Li, Taehyo Kim, Haochen Zhang, Kajanan Chinniah, Sina Maghsoudlou, Ryan Zhang, **Stephen Yang**, Jiadai Zhu, Lyndon Chan, Samir Khaki, Andrei Buin, Fatemeh Chaji, Ala Salehi, Alejandra Zambrano Luna, Bich Ngoc Nguyen, Dimitris Samaras, Konstantinos N. Plataniotis, "Computational Pathology: A Survey Review and The Way Forward", Elsevier Medical Image Analysis, March 2023.
- › Ryan Zhang, Annie Zhu, **Stephen Yang**, "HistoKT: Cross Knowledge Transfer in Computational Pathology", accepted for presentation, 2022 IEEE International Conference on Acoustics, Speech and Signal Processing, Singapore, May 2022.

AWARDS & ACHIEVEMENTS

NSERC Undergraduate Student Research Awards (USRA)

May 2021

Google Cloud COVID-19 Hackathon Fund at Medhacks 2020 for Vision Checker application

September 2020

Realtor.ca Prize at NWHacks 2019 for HouseSearch application

January 2019

SKILLS

Design: Quartus, VCS, Modelsim, Solidworks, Onshape, ANSYS Maxwell, Simcenter MagNet, Fusion 360, Inventor, FEMM, LaTeX

Programming: SystemVerilog, Verilog, tcl, MATLAB, C++, C, ROS2, Python, perl, VBS, Kotlin, React, JS, HTML, CSS

Interests: Hiking, Technology, Formula 1, Reading, Video Games, Photography [landscape, portrait]