Siming He

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EDUCATION

University of Pennsylvania | School of Engineering and Applied Science and Wharton | Philadelphia, PA *May 2024*
Candidate for Bachelor of Science in Engineering (Computer and Information Science)
Candidate for Bachelor of Science in Economics (Statistics and Data Science)
Cumulative GPA: 3.97 / 4.0 *Major GPA:* 4.0 / 4.0

Ridley College | St. Catharines, Ontario, Canada *June 2020*
International Baccalaureate Diploma
GPA: 4.0 / 4.0 | Student with Best Academic Performance (2018-2020)

RESEARCH EXPERIENCES

GRASP Robotics Laboratory, *Student Researcher* | Philadelphia, U.S. *December 2021 – Present*
- Conducted independent study of active exploration of robotics in unstructured environment

Fang-Yen Laboratory, *Research Assistant* | Philadelphia, U.S. *September 2021 – Present*
- Participated in the development of a robot that can perform experiments on C. elegans automatically on 150 Petri dishes
- Implemented algorithms to detect and decode barcode on each of the Petri dishes with a moving camera
- Automatically calibrate the location of a robot arm to the location of given Petri dishes using a camera

Penn Undergraduate Research Mentoring Program, *Research Assistant* | Remote *May 2021 – August 2021*
- Implemented image classification and object detection algorithms
- Built a drone from scratch and worked with ROS
- Learned SLAM algorithm, state estimation, Kalman filter, and dynamic programming and researched active object search problem

Tsinghua University, *Research Assistant at the Knowledge Engineering Group* | Beijing, China *January 2021 – March 2021*
- Worked on the Heterogeneous Graph Benchmark and replicated the experiment of AAAI'20 paper (An Attention-based Graph Neural Network for Heterogeneous Structural Learning) on four heterogeneous graph datasets
- Presented the experiment results in a paper published in KDD2021

Sign Language Translator, *Researcher* | St. Catharines, Canada *January 2019 – December 2019*
- Developed sign language translator that translates sign language videos into text with an accuracy of 93.66% with OpenPose and LSTM network and awarded US regional finalist of the 2019 S.-T. Yau High School Science Award
- Wrote a paper that will be in a publication by The International Press of Boston, publication date to be determined

TECHNICAL SKILLS

- **Machine Learning:** NumPy, Pandas, SciPy, Matplotlib, TensorFlow, PyTorch, Scikit-learn, OpenCV, Python, C++
- **Application development:** Ruby on Rails, HTML, CSS, JavaScript, Vue.js, Java, Java Swing, JDBC, Firebase, MongoDB
- **Other Skills:** Git for Version Control, Bash Scripting

EXTRACURRICULAR ACTIVITIES

Access Engineering, *Teacher* | Remote *September 2020 – May 2021*
- Planned and taught lessons on web development and taught 20 high school students about HTML, CSS, and JavaScript

Rykert After School Program - Science, *Founder* | St. Catharines, Canada *September 2018 – January 2020*
- Taught 20 nearby underprivileged elementary students about interesting science and engineering topics
- Design 10 hands-on projects on topics including electromagnetic induction, software engineering, and Non-Newtonian fluid

Ridley College VEX Robotics, *Lead Programmer & Team Captain* | St. Catharines, Canada *September 2017 – January 2020*
- Developed an API using Python to plan paths and generate code for robotic autonomous mode
- Tutored 3 programmers in VEX programming about syntax, sensors, and basic robotic control systems
- Led a team of 3 builders to build and program multi-functional robots qualified for the world championship

INTERESTS

Sports: Swimming (The Second Level Athlete in China), Tennis (high school varsity team), Soccer (high school varsity team)

Interests: Cook Sichuan and Shaanxi Cuisine, Workout, Business and Technology Ethics, Reading, Robotics, History