Hongchen (Tony) Wang
Home Address: 9 Bogert Avenue, North York, ON, M2N0H3
Office: WB144 #14, University of Toronto
Phone Number: (416)854-0579
Email: hongchen.wang@mail.utoronto.com

Education

University of Toronto (Toronto, Canada) 2022 May - Present
Doctor of Philosophy, Material Science and Engineering

- Research Thesis: High-Throughput Experimentation for High-Pressure Reverse-Osmosis Membranes, supervised by Dr. Jason Hattrick-Simpers
- Project collaborated by Material Science and Engineering, Chemical Engineering, and Mechanical Engineering Departments

University of Toronto (Toronto, Canada) 2017 September - 2022 June
Bachelor of Applied Science and Engineering, Material Science and Engineering (CGPA: 3.82 / 4.00)

- Minor in Advanced Manufacturing and Certificate in Engineering Business.
- Awarded on the Dean's Honors list by the Faculty of Applied Science and Engineering

Honours and Awards

- University Of Toronto Fellowship, Department Of Materials Science And Engineering (2022 Summer) ($1000 CAD)
- Dean's Honors list (2017 Fall, 2018 Winter, 2018 Fall, 2019 Winter, 2019 Fall, 2020 Winter, 2022 Winter)
- Ontario Professional Engineers Foundation For Education Undergraduate Scholarships (2020 November) ($1500 CAD)

Experience

Research Experience

High-Throughput Experimentation for High-Pressure RO Membranes 2022 May - Present
PhD Thesis, Supervised by Prof. Jason Hattrick-Simpers

- Build an automation robot to rapidly synthesize and characterize polymeric membranes for high-pressure desalination applications.
- Seek the Pareto optimal between the membrane permeation and mechanical strength.

Aerodynamic Shell Design and Optimization 2021 September - 2022 April
Capstone Project, Supervised by Prof. Chandra Veer Singh

- Used biomimetic design and ANSYS Fluent Adjoint Solver to design and optimize the aerodynamic performance of a hyperloop shell.
- Manufactured the shell using carbon fiber reinforced polymer prepreg and Nomex honeycomb sandwich structure.
- Designed an AI active learning model to optimize the shell aerodynamic performance.

University of Toronto Hyperloop Team (UTHT) 2019 February - 2022 April
Co-founder, Co-lead of Levitation and Propulsion System

- Organize the team and manage the design process to participate in the SpaceX Hyperloop Competition, Canadian Hyperloop Competition, and European Hyperloop Week.
- Worked on both Electromagnetic LevProp system and Friction Drive, conducting associated technical research and calculations.

Additive Manufacturing Metal Powder Yield Optimization 2020 February - 2020 May
Researcher, Supervised by Prof. Kinnor Chattopadhyay

- Developed an empirical model for the AM metal powder gas-atomization process and optimized the yield.

Additive Manufacturing Metal Powder Yield Optimization 2019 May - 2019 September
Researcher, Supervised by Prof. Kinnor Chattopadhyay

- Develop a machine learning model to improve the AM metal powder water-atomization process by optimizing its yield percent within a given range of sizes.
- Delivered a Python-based Graphical User Interface that can be operated with given data and specifications.

Professional Experience

Litens Automotive Group 2020 June - 2021 August
Tribology & Surface Engineering Co-op, Supervised by Dr. Dina Goldbaum

- Conduct experiments for wear and COF analysis of automotive components and grease degradations.
- Work with various equipment including Tribometer, FTIR Spectroscopy, DSC, Profilometer, 3D Scanner, Hardness tester, etc.
- Developed high-level time management and multitasking skills at the workplace.