

# Alastair Lee

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## EDUCATION

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**University of Rochester, Department of Chemical Engineering, Rochester, NY**

*Master of Science in Chemical Engineering* 2020 – 2021

- GPA: 3.5/4.0

*Bachelor of Science in Chemical Engineering* 2016 – 2020

- Graduated with high distinction
- GPA: 3.3/4.0
- Dean's List (Spring 2017)

## WORK EXPERIENCE

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**University of Rochester, Rochester, NY**

*Research Assistant, Computational Fluid Dynamics Group* Aug 2019 – May 2021

- Analyzed fluid flow in 30 patient-specific carotid arteries to identify patterns that could indicate stroke using ANSYS Fluent
- Discovered trends in the velocity data of stroke patients that suggest a notable difference between stroke and non-stroke patients
- Improved procedure for analysis by discovering shortcuts in the program that reduced the amount of manual processing time by up to 80% while maintaining the same accuracy
- Functioned as a supervisor and mentor to other members of the group, helping to correct mistakes and answer questions on how to further analyze each patient

*Teaching Assistant, Lab in CHE Principles* Aug 2020 – Dec 2020

- Managed five groups of three students each in their Lab projects, advising them and helping to keep track of their progress
- Attended biweekly meetings to critique each groups' pre-lab reports and extrapolate their potential difficulties they would have in lab
- Assisted students outside of assigned hours by answering questions or listening to presentation rehearsals through Zoom

## PROJECT EXPERIENCE

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**University of Rochester, Rochester, NY**

*Co-Chairman and Former Business Manager, Chem E Car Club* Aug 2018 – May 2020

- Led a 15-person team in creating a miniature vehicle for an annual competition hosted by the American Institute of Chemical Engineers
- Created a battery to function as the power source for the vehicle using a magnesium dioxide cathode and a zinc anode
- Established a production line to create the battery, utilizing each team members' expertise to create prototypes most efficient for rigorous testing
- Designed and built the chassis of the vehicle using CAD and 3D printing

- Organized weekly briefing sessions and created timelines to coordinate workflow between team members, reallocate resources as needed, and ensure critical deadlines were achieved
- Functioned as Business Manager in the 2018-2019 school year, ordering chemicals and battery materials, and interfacing with the Department of Chemical Engineering

*Student Researcher, Medical Center*

Jan 2020 – May 2020

- Investigated polymers to create kidney models for medical students' training
- Led group testing for how reordering the formulation procedure would affect the Young's Modulus and clarity of the resulting polymer, using a factorial DOE
- Detailed a technical transfer report to convey findings and experiments completed

*Electoral Board Member, American Institute of Chemical Engineers*

*Chapter*

Aug 2016 – May 2020

- Co-led a team to participate in the annual Pumpkin Launch Competition, winning the event back-to-back years despite fewer team members and less expertise compared to other engineering organizations
- Acted as intermediary between Chapter President and board member to assist with work allocation
- Participated in weekly meetings to organize and publicize events for the student body, including research talks and social event

*Student Researcher, Lab in CHE Principles*

Aug 2019 – Dec 2019

- Led and designed group project in testing pump system with both vane pump and centrifugal pump
- Constructed a Piping and Instrumentation Diagram of the system for wrap-up presentation and report
- Completed group project using gas chromatography, analyzing how differences in injection technique, time, and cleanliness can affect the results of the GC test

## **OTHER SKILLS**

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- Proficiency in Python, ANSYS Fluent, and MS Office
- Familiarity with Mathematica, LabVIEW, AutoCAD, Space Claim, Design Modeler, and NX
- Familiarity with NMR Analysis, IR Analysis, Gas Chromatography, Mass Spectroscopy, and Titration
- Proficiency in Cantonese and Mandarin