

Ethan Xiao-xin Rosentreter

MECHANICAL ENGINEER

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Profile

Mechanical Design	CATIA V5, Solidworks, Fusion 360, materials, adhesives, kinematics, FEA, CFD
Prototyping	Waterjet, 3D printed SLA and FDM parts, CNC milling, laser cutting
Controls	Pneumatic and hydraulic actuators, switches, sensors, robotics, computer navigation
Programming	Python, Git, Matlab, pattern recognition, OpenCV, Arduino, ROS
Self-Direction	Strong initiative to learn, solve problems and ask questions

Relevant Experience

Tesla

Los Angeles, CA

INTERN, NEW PROGRAMS ENGINEERING

January - April 2018

- Designed and fabricated prototype for precision sensor mount. Optimized using FEA in CATIA. Constructed from waterjet aluminum, 3D printed plastics, and CNC milled foam. 3D scans confirmed positional accuracy within 3 mm.
- Prototyped pneumatic control system and switch panel for manufacturing equipment, prioritizing reliability and operator safety. Panel put into production across 16, full-time manufacturing lines.
- Transformed test vehicle suspension to allow adjustable ride height using electric linear actuators.

Tesla

Palo Alto, CA

INTERN, BODY IN WHITE DESIGN

May - December 2017

- Improved accuracy of test procedures to finish validation of new weld wire, resulting in a \$23 cost down per vehicle.
- Designed bent sheet metal mount for “E-Call” system, under manufacturing, crash safety, ergonomic and packaging constraints. FEA and cost analysis conducted to assess the design against competing options.

Technical University of Munich

Munich, Germany

ROBOCUP@HOME PRACTICAL COURSE

October 2016 - April 2017

- Collaborated with team of 5 students to program service robot for RoboCup@Home competition, utilizing Python, OpenCV, ROS and basic C++. Robot was able to fetch a cola can, in complex, changing environment.
- Due to our progress the university qualified for the RoboCup competition for the first time.

Toronto Transit Commission

Toronto, Canada

CUSTOMER FACING INFORMATION SCREENS

May - August 2015

- Designed, packaged, and tested new solar powered, internet connected bus stop sign utilizing lithium-ion batteries, solar components, a GSM modem, electronic displays and Python.
- Well received prototype to serve as a starting point for widely implementing new signs.

Education

University of Waterloo

Ontario, Canada

B.A.SC. IN MECHANICAL ENGINEERING

September 2013 - June 2019

- Top of Class - Ranked 1st or 2nd in class every semester studied.
- Capstone Project - Conceptualized, designed and prototyped “Counter Culture” Essential Oil Extractor, utilizing stepper motor, resistance heaters and gear system. Project accepted into Canada’s largest start-up incubator.
- Electronics – microprocessors, circuits, pattern recognition, hydraulic and pneumatic control systems.

Interests

I am an avid snowboarder and surfer, ex-vegetarian, and self-proclaimed minimalist. I love Chinese tea, good beer, and can also speak a little bit of Mandarin. My pet projects include a self-hosted movie server and a photo journal.