

Elman Chao

exlchao@edu.uwaterloo.ca | 647.876.0366 | elmanchao.com

University of Waterloo

Computer Science – COOP Expected 2019
Cumulative GPA: 3.7/4.0

Mechanical Engineering – 2012 to 2015
Cumulative GPA: 3.8/4.0
Dean's Honors List

SKILLS

LANGUAGES: Python • C • C++ • JavaScript • HTML5 • CSS3 • Racket • Matlab

STACK: MongoDB • Bootstrap • jQuery • Express.js • MongoDB • Node.js

WORK EXPERIENCE

Tesla Motors, Powertrain Engineering Intern

Spring 2016

Palo Alto, CA

- Wrote scripts to automate data acquisition, processing, and analysis of thermal/electrical signals using **python**(NumPy, Pandas, NI DAQ, Agilent DAQ)
- Refactored existing LabView code to **python** to improve maintainability and feature set
- Developed 5+ reusable modules to the powertrain test lab python library

Dana Holding Corporation, Advanced Product/System Development Engineer

Fall 2015

Oakville, ON

- Electric vehicle battery cooler development (Design, Prototyping, Test and Validation)
- Data analysis of thermal behavior on aluminum and copper brazing (Matlab)

Hatch, Mechanical Consulting Intern

Winter 2015

Mississauga, ON

- Lead design and analysis of a 300 cu. Ft foundry ladle (ANSYS, Solid Edge, MathCad)
- Data Analysis on fuel consumption rates for heavy duty vehicles
- Successfully developed and executed a multistage vibration induced likelihood of failure analysis

TEAM EXPERIENCE

University of Waterloo Alternate Fuels Team, Technical Team Member

2013-2015

Waterloo, ON

Milford, MI

Washington, D.C

- Core member of a four year competition for the **Ecocar** program. Involved stripping a stock Chevrolet Malibu and turning it into a hybrid vehicle
- Modeled and analyzed several hybrid vehicle architectures using Autonomie, Matlab and Simulink to estimate and optimize mileage and performance
- Rear-subframe CAD design/FEM structural analysis (Unigraphics NX, Hyperworks)

PROJECTS

Sorcery Card Game, C++, Object Oriented Design Patterns

Winter 2017

- Strategy card game built for command-line interface, similar to hearthstone.
- Designed card classes to activate using Subject-Observer Pattern
- Applied various object-oriented design patterns (Subject-Observer Pattern, Decorator Pattern, Factory Method)

Plaza Food Advisor, Node.js, jQuery, MongoDB, mongoose, Express, Bootstrap

April 2017 - Ongoing

- A website that keeps track of the best dishes at the local waterloo food plaza. Allows users to add new dishes to the database with pictures and comments.
- Implemented frontend using HTML5, CSS3, Bootstrap and jQuery
- Implemented backend using Node.js(Express) with passport.js OAuth and Mongo as database