Elman Chao

University of Waterloo

2A Computer Science **2016 - Present**

Mechanical Engineering **2012 - 2016**

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SKILLS SUMMARY

Software: Python, C, C++, Bash, HTML5, CSS, JavaScript, Git, Racket, Matlab/Simulink

Mechanical: Proof-of-concept Prototype development, Material Selection, FEA, Design for manufacturability, Data analysis (Matlab), Component testing, Vehicle architecture modeling, Machining, MathCad, Autonomie, ADAMS, Unigraphics NX, SolidEdge, SolidWorks, AutoCAD, Hyperworks, CadnaA, ANSYS Workbench

WORK EXPERIENCE

Tesla Motors, Powertrain Engineering Intern

Spring 2016
Palo Alto, CA

- Fabricated and programmed test equipment to validate Model S/3/X vehicle components
- Used **python** to automate data acquisition, processing, and analysis of thermal/electrical signals (NI DAQ, Agilent DAQ)
- Refactored old LabView code to **python** to improve maintainability and feature set
- Maintained and added features to the python codebase used in the powertrain test lab

Dana Holding Corporation, Advanced Product/System Development Engineer

Fall 2015
Oakville, ON

- Battery cooler development (Design, Prototyping, Test and Validation)
- Thermal contact resistance prototype fixture design
- Data analysis of thermal behavior on aluminum and copper brazing
- Material microstructure analysis for braze failure and component leaks

Hatch, Mechanical Consulting Intern

Winter 2015
Mississauga, ON

- Lead design and analysis of a 300 cu. Ft foundry ladle according to AISE design codes using ANSYS Workbench, 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

University of Waterloo Alternate Fuels Team, Technical Team Intern

Spring 2014
Waterloo, ON

- Four year competition for the **Ecocar** program. Involves designing and building a full size alternate fuels vehicle.
- Modeled and analyzed several hybrid vehicle architectures using Autonomie, Matlab and Simulink to estimate and optimize mileage and performance
- Machined and assembled welding jig for rear subframe

University of Waterloo Alternate Fuels Team, Technical Team Intern

Fall 2013
Waterloo, ON

- Rear-subframe CAD design/FEM structural analysis (Unigraphics NX, Hyperworks)
- Machined custom designed components including a power transfer pulley system, active headlight mounts (mill, lathe)
- Studied power transfer system failure between engine and generator