

Michael Zhang

University of Waterloo - BAsC, Mechanical Engineering, 2024

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Experience

Apple - iPhone Product Design Intern

Jan - Aug 2023

- Led the design, system integration, validation, and vendor logistics of over 50 unique components for future production
- Owned design of a new module, packaging double the input degrees of freedom into existing form factor
- Supported system builds and reliability testing, conducting root cause analysis and driving design updates

Zipline - Structures and Mechanisms Engineering Intern

Jan - Aug 2022

- Directly responsible for the design of power conductors in the upcoming P2 vehicle
 - Performed FEA and physical testing to optimize thermal performance across a spectrum of flight profiles and reduce part mass by 50%; increased vehicle payload, resulting in a projected annual revenue increase of over \$5 million
 - Simplified assembly to lower cycle time by 30% and decrease EMI effects with precise conductor placement
- Designed ingress protection for part interfaces, derisking lifetime durability with environmental and fatigue testing
- Proposed and demonstrated a novel solution to simplify and mass-down a multi-DoF system by 40%, selected as PoR

Lucid Motors - Interior Components and Systems Intern

Sept - Dec 2021

- Developed fixtures that align complex-curved surfaces to meet cosmetic specs, reducing rework time by 30%
- Designed HVAC switch, reducing package footprint by 50% while enabling an additional set of user-inputs
- Conducted root cause analysis of production blocking manufacturing issues, developed and implemented solutions

Multimatic Inc. - Senior Design Engineering Intern

Jan - Apr 2020

- Designed injection molded (MIM/plastic), machined, welded, and extruded automotive components
- Enabled an additional DoF in damper tuning, while reducing part count by developing a bespoke check valve
- Carried out tolerance analysis for hydraulic valves and product assemblies, utilizing GD&T in drafting

Solar Car Team - Suspension Lead

Dec 2019 - Jun 2020

- Decreased suspension packaging volume by 25%, enabling a 5% reduction in vehicle drag coefficient
- Performed kinematic analysis to optimize wheel path, damping, and spring rate, minimizing vehicle energy loss
- Conducted detailed design of suspension and chassis components to withstand driving loads, validating with FEA

Skills

CAD/FEA:

Catia V6/3DX

NX/Unigraphics

ANSYS (Icepak, CFX, Structural, ACP)

SolidWorks

Design Concepts:

Tolerance Analysis

GD&T / Drafting

DOE

Material Selection

DFM:

Injection Molding

CNC machining

FDM/SLS/SLA

Composites

Programming:

Python

C++

Matlab

Java