

EXPERIENCE

Mechanical Design Engineer - Chassis Engineering

March 2024 — Present

Tesla

Palo Alto CA, USA

- Mechanical design engineer for suspension systems on Model Y, Model 3, and RoboTaxi programs
- Design and provide full life-cycle support for components such as wheels, wheel covers, suspension links, bushings, ball joints, knuckles, and stabars, optimizing for performance, durability, mass, and cost
- Collaborate cross functionally with other internal groups to achieve program targets - reliability engineering, testing, vehicle dynamics, vehicle modeling, tire engineering, aerodynamics, commercial, etc.
- Coordinate with suppliers on development, validation, and global industrialization of suspension components
- Built analysis tools for visualization and modeling of suspension bushing performance, including a custom state of art bushing model accounting for non-linear stiffnesses, rubber hysteresis, and high frequency dynamic behavior

Simulation and Tire Engineer

June 2022 — Feb. 2024

Pratt Miller (Contract)

Guelph ON, Canada

- Lead developer of a vehicle data processing tool for Corvette Z06 GT3.R factory & customer teams
- Lead developer for a Dymola tire simulation library - implemented numerous tire modeling improvements
- Coordinated with Michelin, Goodyear, Pirelli on their tires used by Corvette Racing and provided tire model support
- Development of regression testing frameworks for validating Corvette Racing and IndyCar vehicle simulation libraries
- Created an advanced track temperature model capable of predicting variation in temperature across a track's surface

Simulation and Tire Engineer

July 2019 — June 2022

Pratt Miller

Huntersville NC, USA

- GM's representative to the NASCAR Tire Testing Consortium (TTC). Responsible for supporting tire force and moment tests, coordinating with Goodyear and other OEMs on testing approach for 25+ different track tire codes.
- Generation of all base Tire Models distributed to Chevy's teams in the NASCAR Cup, Xfinity, and Truck series
- Creation of Tire Reports for NASCAR teams to inform vehicle setup decisions for each race
- Attending of track tests, processing and analysis of vehicle telemetry data
- Tuning of Tire Models during Driver-in-Loop simulation with NASCAR drivers
- Developed improved formulations of Semi-Empirical Tire Models for increased model fidelity
- Developed a comprehensive MATLAB-based tire analysis software package for Data Visualization, Data Processing, Model Optimization and Validation

VOLUNTEER EXPERIENCE

Member

May 2023 — March 2024

Diyode Community Workshop

Guelph ON, Canada

- Member of community workshop for metalworking, woodworking, electronics, manufacturing
- Contributed to improving the shop space and upkeep of equipment, built personal projects

Suspension Lead, Suspension Member, Chassis Member

Sept. 2016 — May 2019

Gryphon Racing Formula SAE (Student Club)

Guelph ON, Canada

- Responsible for performing vehicle dynamics analysis to set systems-level design goals for an open wheeled race car
- Managed a team of 7 people carrying out the design and manufacturing of all suspension and steering components
- Created all-new suspension and steering setups for an updated 10" wheel package, significantly reducing center of gravity and overall mass
- Designed and manufactured numerous parts such as hubs, rockers, steering rack & column, suspension links, etc.
- Received the highest Suspension Design score at competition since team inception in 2002, and was one of the team's 4 competition drivers

EDUCATION

Bachelor of Engineering - University of Guelph

Sept. 2015 — April 2019

- Mechanical Engineering Specialization

CERTIFICATIONS AND COURSES

Foundational C# with Microsoft - freeCodeCamp

Dec. 2023

- Introduction to core concepts in C# programming through Microsoft Learn platform

Design of Experiments (DoE) for Engineers - SAE International	Aug. 2023
<ul style="list-style-type: none"> Course offered by SAE covering experimental approaches for testing and characterizing physical systems 	
HTML, CSS, and JavaScript for Web Developers - The Johns Hopkins University	Nov. 2022
<ul style="list-style-type: none"> Course on fundamentals of web design covering formatting, styling, and interactivity 	
GD&T Fundamentals Based on ASME Y14.5-2018 - SAE International	April 2022
<ul style="list-style-type: none"> Course offered by SAE covering foundational concepts required for creating and interpreting Engineering Drawings 	
IBM Data Science Professional - IBM	March 2022
<ul style="list-style-type: none"> Comprehensive series of courses covering data science methods and best practices 	
Fundamentals of Audio and Music Engineering - University of Rochester	Aug. 2021
<ul style="list-style-type: none"> Course on the physics of sound, and characteristics of electronics such as speakers, amplifiers, instrument circuits 	
Neural Networks and Deep Learning - DeepLearning.AI	May 2020
<ul style="list-style-type: none"> Introductory course to the structure and applications of neural networks using Python 	

SKILLS

Skills	Mechanical Design, GD&T, Structural Analysis, FEA, Manufacturing, Fabrication, Design of Experiments, Data Analysis, Optimization, Mathematical Modeling, Software Development
Software	Microsoft Office, SolidWorks, ANSYS, MATLAB, VS Code, Dymola, Jupyter Lab, Git, Pi Toolbox, Motec i2, Dymola, MSC Adams, MasterCam, Fusion 360
Programming Languages	MATLAB, Python, C++, C#, Modelica, LATEX, HTML/CSS

PROJECTS (PERSONAL & ACADEMIC)

Motec i2 Workspace for Driving Simulation Data	Aug. 2025
<ul style="list-style-type: none"> Created a Motec i2 Pro workspace template for analyzing vehicle telemetry data from rFactor 2 	
Avera G-60 Electric Guitar Design	Oct. 2023 — Present
<ul style="list-style-type: none"> Created a new open-source electric guitar design Built project website and shared files for design and manufacturing 	
Personal Website Design	Nov. — Dec. 2022
<ul style="list-style-type: none"> Built Jekyll-based website to share projects related to engineering and personal hobbies 	
ChassisSim Online Race Engineering Competition	Oct. 2020
<ul style="list-style-type: none"> Competition to optimize simulated lap time and drivability of a LMP2 car, by modifying vehicle design and setup parameters Placed 10th out of 150+ entries 	
Carbon Fibre Rim Design	Sept. 2018 — April 2019
<ul style="list-style-type: none"> Senior Capstone design project to design and manufacture a prototype carbon fibre racing rim Performed structural analysis (FEA) and designed geometry for the carbon fibre wheel Designed and manufactured a unique modular mold design for carbon fibre layup 	
Shock Dynamometer Development	Sept. 2018 — April 2019
<ul style="list-style-type: none"> Built a shock dynamometer for testing and characterizing Formula SAE dampers Focused on mechanical design, manufacturing, data processing and validation 	
Precision Irrigation Machine	Sept. — Dec. 2017
<ul style="list-style-type: none"> Led a design group that built a proof of concept for a precision irrigation machine, capable of accommodating different watering needs on a plant-to-plant level Focused on enclosure design, component selection, stress analysis, kinematic analysis, and manufacturing 	