Taha **Malik**

MEng Mechanical & Mechatronics

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Skills Overview

Mechanical	Hardware	Software
GD&T, DFM/A, FEA, Tolerance Analysis, ANSYS, SolidWorks, Catia, HyperWorks	Arduino, Motors, PCBs, CAN, Serial, Linux, Rapid Prototyping	Python, Java, HTML/CSS, MATLAB, C/C++, Git, VBA

Experience

Tesla, Fremont CA **-** *Mechanical Design Engineer* 2023 (May) - Present

- Safety lead for **Semi Truck**, seatbelt lead for **Robotaxi**, and technical lead for **Motorized Retractors**
- Created machine learning and computer vision algorithms to detect belt usage with a **92% accuracy rate**
- Built software & electronics for sled testing with GUI, failsafes, battery management system, and interlocks
- Designed and implemented safety components from concept to production using stamping, molding, and machining
- Improved vehicle safety by linking seatbelt response to Autopilot, leading to a **86% reduction in risk of injury**
- **Integrated prototype seatbelts** into fleet vehicles for exec/VP demos, data collection, and optimization
- Developed novel 48V motors to improve seatbelt integration, leading to a **$40 million cost down** over life of program
- Managed manufacturing supplier tooling development & validation (DV/PV/PPAP)
- Conducted **CAE analysis** to ensure part integrity and regulation compliance with regulatory bodies

Skill Development: High Volume Manufacturing, Cross-Functional Collaboration, Programming

Institute for Quantum Computing (UW), Waterloo ON **-** *Research Assistant* 2023 (Jan - Apr)

- Conducted **thermal analysis** and developed cooling solutions for lasers, FLIR cameras, and acousto-optic modulators
- Programmed robust **control algorithms** to regulate temperature for a trapped-ion quantum simulator

Skill Development: Heat Transfer, PCB Design, Lasers & Optics

Tesla, Fremont CA **-** *Mechanical Design Engineering Intern* 2022 (Feb - Aug)

- Delivered design changes on belt buckles leading to **44% improved part behavior** and over **$100,000 in annual savings**
- Categorized seat belt loading responses in different crash environments by fabricating a **force testing fixture**
- Completed dimensional **tolerance stack up studies** to optimize A-surfaces on Cybertruck while improving performance of safety components
- Designed and sourced **injection molded bracket** to improve harness routing in all Tesla vehicles across all regions

Skill Development: Project Management, Product Lifecycle, Supplier Relations

FyeLabs, Hamilton ON **-** *Mechatronics Engineer* 2021 (June - Dec)

- Designed & assembled automated bagging system while managing pneumatic, mechanical and electrical subassemblies in ePDM
- Iterated upon crypto-miner frame design leading to a **reduced cost by 31%**
- Conducted **thermal, stress, and CFD analysis** on various projects

Skill Development: Product Design, Client Communications, Engineering Analysis

Education

University of Waterloo, Waterloo ON

- MEng, Mechanical & Mechatronics Engineering, Graduate Diploma in Design **(GPA: 3.9)** Sept 2021 - Apr 2023
  Engineer of the Future Award
- BASc, Mechanical Engineering w/ Option in Biomechanics **(GPA: 3.7)** Sept 2016 - Apr 2021
  Norman Esch & Adel Sedra Entrepeneurship Awards
  Canadian Posture & Seating Centre Project Award
  Mechanical & Mechatronics Engineering Design Award