# Huzaifa H. Khan

huzaifahkhan.com
huzhkhan@gmail.com


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**EDUCATION**

**University of Waterloo** — Waterloo, Canada
*BASc in Mechanical Engineering* — *June 2020*
- **Capstone:** Autonomous EV Charging Robot for Robo-Taxis

**INTERESTS**

Autonomous Vehicles, Robotics, Machine Learning

**WORK EXPERIENCE**

**Voyage Labs** — Waterloo, Canada
*Intern, Mechatronics Design* — *Sep 2019 - Dec 2019*
- **Highlights:** Developed an automated system for testing THC sensors using a 3-axis liquid-handling robot. Created python scripts to execute test protocols and reduce cycle time by 66%.

**Tesla** — Palo Alto, USA
*Intern, Energy Products Design* — *Jan 2019 - Apr 2019*
- **Highlights:** Designed steel enclosures for high-pressure testing to validate the function of deflagration vents in Megapack. Optimized structural integrity using FEA simulations in CATIA V6.

**Tesla** — Sparks, USA
*Intern, Energy Products Manufacturing* — *Sep 2018 - Dec 2018*
- **Highlights:** Root-caused the primary source of scrap rate in battery module process by studying manufacturing line and quality log. Implemented corrective action to reduce OpEx costs by $1.5M.

**Tesla** — Fremont, USA
*Intern, Model S/X Powertrain NPI* — *Jun 2018 - Sep 2018*
- **Highlights:** Collaborated with cross-functional teams to test and validate over 20 production changes for Model S/X powertrain. Analyzed large data sets using statistical methods to suggest improvements.

**Toyota** — Cambridge, Canada
*Intern, Body-Weld Manufacturing* — *Jan 2018 - Apr 2018*
- **Highlights:** Designed robot end-of-arm tooling to achieve multi-model capability between Corolla and RAV4 parts. Assessed design against competing options under safety, quality, productivity and cost criteria.

**Department of National Defence** — Gatineau, Canada
*Intern, Submarine Weapon Systems* — *Sep 2016 - Dec 2016*
- **Highlights:** Investigated the root cause of failure for damaged Submarine Indicator Units (SIUs), Proposed design modifications to reduce joint stresses in SIUs by 70% and yield $35,000 in savings.

**University of Waterloo Formula Hybrid SAE** — Waterloo, Canada
*Team Member, Powertrain Design* — *Sep 2015 - Jul 2016*
- **Highlights:** Worked in a small team to design and prototype a motor cooling system to enhance vehicle performance. Developed a data logger using an Arduino & thermocouples to monitor ATF temperature during wet rotor testing.

**AWARDS**

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| **ASME Northern Alberta Design Award** | 2020 |
| **General Motors Innovation Award** | 2020 |
| **Engineer of the Future Fund** | 2020 |
| **Hack for Health Competition Winner** | 2015 |
| **University of Waterloo President's Scholarship** | 2015 |

**SKILLS**

**Mechanical Design:** CATIA V6, Solidworks, manufacturability, fixtures, GD&T
**Engineering Tools:** FEA in CATIA & Solidworks, CES EduPack, Matlab, LabView
**Prototyping:** 3D printing, laser cutting, CNC machining, Arduino, soldering
**Languages:** Python, C++, G-Code, LaTeX
**Theory:** Mechanics, materials, fatigue, plastics & composites
**Self-Direction:** Strong initiative to learn, solve problems and ask questions

**RELEVANT COURSES**

Mechanical Design 2 (ME423); Advanced Dynamics and Vibrations (ME524); Fatigue and Fracture Analysis (ME526); Manufacturing of Mechanical Materials & Composites (ME596)