Zhiyi Chen

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EDUCATION

Ontario Tech University (UOIT) – CEAB Accredited **Sept 2018 – May 2023**

Bachelor of Engineering (Honours) – Mechanical Engineering & Co-op – With Distinction

- **Academic Achievements:** 3x President's List, 2x Dean's List
- **Relevant Coursework**:
  - Finite Element Methods (A-) – *Vehicle Structural Design using 3D Frames*
  - Adv. Solid Mech. & Stress Analysis (A) – *Wooden Stick Bridge (Ranked **Top 3** of 30, weight: **0.435 kg**, load: **230 kg**)*
  - Computer Aided-Design (A+) – *Design and Analysis of a Driverless Delivery Vehicle*

SKILLS & QUALIFICATIONS

- **Modeling/CAD:** CATIA, SolidWorks, NX, AutoCAD, Slicers/3D Printer
- **CAE:** ANSYS (Mechanical, Fluent)**,** NX CAE
- **Programming Languages:** MATLAB, C/C++, Python
- **Productivity:** LaTeX, Microsoft Office
- **Soft Skills:** quick learner, critical thinker, team player, self-motivated, detail oriented, independent
- **Languages:** English, Mandarin

WORK EXPERIENCE

Honda of Canada Mfg. **May 2021 – August 2022**

Engineering Project Manager, Intern

- Implemented 15+ equipment improvement projects, saving over $100,000 in employment and annual operation costs
- Co-led large scale projects of $1.2M+ using **Smartsheet** and **Microsoft Project** to ensure timely completion of deliverables
- Used **CATIA** to design and develop projects:
  - Built and designed a **HVAC** equipment with **800-parts**; drafted construction drawings
  - Utilized Cura slicer and Ultimaker s5s to produce industrial grade 3D printed parts
  - **Modeled vehicle surfaces** and attachment points with a focus on industrial robot **DFA**
  - Designed sheet metal parts, and enclosures for materials testing ovens
- Performed decision analysis tables, root cause analysis, countermeasures, and continuous improvement methodologies (**PDCA**)
- Pitched, informed, and provided valuable insights of multiple investment projects to senior management
- Led and assisted in the modification of industrial robot cells, ensuring that **PHSRs** and safety standards are updated
- Used **Karel**, **Cognex Insight**, and a Fanuc CRX COBOT to use machine vision and a vacuum cup; assembled a 1:10 car model
- Developed a structured training program for incoming and future interns, trained department interns for 4 months
- Worked in compliance with company policies, international standards, and codes

Ontario Tech Racing, Formula SAE Team **Oct 2019 – May 2021**

Drivetrain, Braking, and Steering Specialist

- Performed in-depth research, testing of various design concepts, and appropriate **GD&T** for powertrain assemblies
- Collaborated with various **cross functional teams** to ensure development of part, task assignment, and deadlines were met
- Developed a **Simulink** model of the vehicle's drivetrain to accurately predict its power delivery characteristics
- Utilized **Ansys** to predict brake rotor operating temperature ranges and structural integrity under harsh driving conditions
- Designed and performed **FEA** on steering assemblies (pillow blocks, steering clevis) to ensure durability

CAPSTONE

Design and Development of Front and Rear Wings for a Formula SAE Race Car **Sept 2022 – April 2023**

- Collaborated with 6 students to increase aerodynamic performance of the FSAE vehicle using **FEA** and **CFD**
- Manufactured the wings using MDF molds, 3D printed pieces, carbon fiber composites, aluminum and infusion techniques
- Tested and analyzed its airflow and performance in a wind tunnel and vibration data in a 4-post shaker
- Achieved the target center of pressure and exceed coefficient of lift target by 22%

PROJECTS

Vehicle Structural Design using 3D Frames, Torsional Stiffness Study **Nov 2022 – Dec 2022**

- From the node locations and initial dimensions of the structural beams, a simple **FEA** program was developed within **MATLAB** using the Direct Stiffness Method to simulate the torsional stiffness of space frame
- Collaborated with 5 students to optimize the beams' thicknesses in various locations using PSO and Ansys' RSM
- Reduced the weight of the frame by 42% from the initial while maintaining the same torsional stiffness