

EDUCATION

B.Eng(Hons) Mechatronics Engineering OntarioTech University

09/2020 - Present

GPA: 3.55/4.3 (B+)

Courses:

- Control Systems, Kinematics & Dynamics of Machines, CAD, Solid Mechanics, Concurrent Engineering Design.
- Electronic Circuit Design, Circuit Analysis, Advanced Calculus, Object Oriented Programming, Probability & Statistics, Numerical Methods.
- President's List F2020, W2021 & Dean's List F2021
- Lean Six Sigma Yellow Belt Certification

WORK EXPERIENCE

Jr. Engineering Specialist, Advanced Engineering | Co-op Stackpole International Inc.

05/2022 - 09/2022

Toronto, Canada

Achievements/Tasks

- Developed **Verification and Validation** testing procedures for mechatronic pumps, in accordance with the necessary automotive standards (IEC, ISO, ASPICE).
- Performed physical benchmarking testing of mechatronic sub-systems for reliability and performance data collection. Analyzed data and generated reports using **Excel** and PowerPoint, mapping key parameters and their impact on performance with respect to environmental conditions, and system requirements.
- Conducted elementary tolerance analysis by reviewing 2D & 3D mechanical drawings to the manufacturer specification sheet utilizing **GD&T** to achieve desired fit and functionality of manufactured pump parts.
- Supported warranty returns, studies, and examinations of production pumps using **RCA** (Root Cause Analysis) to develop plans for resolution and mitigation of issues.

Fanatics Customer Service Representative Teleperformance Canada

05/2019 - 09/2019

Toronto, Canada

Achievements/Tasks

- Delivered exceptional customer service to customers by leveraging extensive knowledge of products and services to create positive experiences with a **95% satisfaction rate**.
- Fielded customer inquiries regarding available merchandise stock, sales, current prices, and upcoming company changes. Upsold customers on special orders to **increase total sales by 10%**.
- Communicated with vendors regarding back order availability, future inventory shipments, and special orders.

SKILLS

3D CAD Modeling & Simulation

Team Management

SOLIDWORKS, Siemens NX, AutoCAD & SketchUp

Research & Technical Report Writing

HTML, CSS & JS

C/C++, Java & Python

MS Excel, PowerPoint & Word

MATLAB & Simulink

NI Multisim & LabVIEW

Use of Multimeter, Oscilloscope & Spectrum Analyzer

Strong Written & Verbal Communication

Teamwork

Project Planning

Lean Six Sigma

Arduino & PI

PROJECT EXPERIENCE

Personal Portfolio Website (01/2022 - Present)

- URL:** harshkachhia.github.io/
- Coded a responsive personal website to showcase the Mechanical, Electrical and Software projects done, along with their respective files, code & working video.

Portable Thermostat (06/2022 - 06/2022)

- Constructed a portable thermostat using Arduino Uno attached to a power bank. Coded the device to accurately update temperature and humidity index data once every 2 seconds.
- Useful for many applications that require temperature mapping on the go such as nuclear reactor rooms and central campus monitoring. Temperature data updates live on the OLED screen on the breadboard as well Bluetooth transmission to the phone via App.

Autonomous Mechanical Rickshaw (10/2021 - 11/2021)

- Lead a team which designed and constructed a humanoid robot pulling a rickshaw carriage(Meccano Kit) that incorporated a gearbox mechanism to upscale torque from a 6V motor by 150% and a carriage with passive suspension using DFMEA & 8D's.
- Modelled the parts of the physical prototype and assembled the system in SOLIDWORKS to create a virtual model with an accurate motion analysis video.

Aircraft Landing Gear (09/2021 - 10/2021)

- Concurrently designed & constructed a physical(Meccano Kit) and virtual model(SOLIDWORKS) of an aircraft landing gear which deploys and retracts 100% of the time inside a 30 x 30 x 30 cm³ enclosure.
- Applied DFMEA principles for physical prototyping and created a motion study analysis & BOM of the virtual model for presentation.

SafeBox (04/2019 - 05/2019)

- Used PICAXE microcontroller and various sensors to build a safebox with an alarm system.
- Safebox locking mechanism incorporated a photoelectric sensor to detect master key(blue). Switches and gyroscope sensors were used on the system to detect lifting, translation and rotation movement.

Traffic Light Control System (03/2019 - 04/2019)

- Constructed and programmed a traffic light control system which revolved around a PICAXE microcontroller.
- Simulated active traffic data was read using IR & proximity sensors to control traffic flow by adjusting traffic light color.