linkedin.com/in/jatan-bhatt in

# EXPERIENCE

# SNC LAVALIN (NUCLEAR)

June 2018 - August 2018

# **Instrumentation and Controls Engineering Intern**

- Worked on nuclear fuel channel inspection tooling (NDE).
- Created custom SQL based database for practical training purposes.
- Analyzed performance metrics to provide insight on possibilities for future improvement.

# FIRST ROBOTICS (TEAM 1241)

## Mechanical Design Alumni Mentor

September 2016 - Present

- Mentored students by guiding them through the structured design process.
- Applied University level physics in order to calculate specifications such as:
  - Gearbox ratios, stall load, current draw
- Reduced a 1 hour task to 2 minutes by deriving calculations and implementing them in excel.

# Mechanical Design and Manufacturing Team Lead

September 2010 - June 2016

September 2016 - December 2016

- Spearheaded design and manufacturing efforts to optimize and detail design several different robot subassemblies for high school robotics team based on unique game-based challenges.
- Projects included design and fabrication of :
  - Custom drivetrain gearboxes to satsify a predetermined linear speed while ensuring motors do not stall under load
  - Pneumatically actuated and spring loaded mechanisms used to manipulate a variety of game pieces
  - Arms and linkages as well as their gearboxes used move loads at a certain angular speed
- Rapid prototyping using 3D printing and CNC Mills.
- Led a sub-team and delegated work to ensure the tight 6-week deadline.
- Optimized design for manufacturing and assembly with a focus on quick machining times and easy maintenance.

**SMART POWERBAR** July 2017

### **Personal Project**

- Functional IoT prototype utilizing Particle Photon to control a relay over WiFi.
- Remotely controlled using iPhone or Mac.
- Integration with Apple HomeKit using Node.js

## **IMPACT PROJECT**

## Team Lead

- Designed a solution featuring a custom offset 4-bar linkage which allows users to eat their meals at an ergonomic height and stows away when not needed.
- Iterative design based on feedback from peers and industry experts.
- Chosen as "Best Design" out of 1000 first year engineering students and is currently being used at St. Peter's Senior home in Hamilton

# AWARDS

2017 2<sup>nd</sup>/54 Teams McMaster Engineering Competition Junior Design 2017 Provincial Ontario Engineering Competition Junior Deisgn 2016 1st/22 Teams McMaster Engineering Competition Junior Design 2016 1st/252 Teams McMaster Engineering IMPACT Project

2016 International FIRST Robotics Competition World Championship Division Finalists

Platinum Award - Outstanding Student 2016 Inner Team

Innovation Award 2015 Inner Team

2013 International FIRST Robotics Competition World Champions

# COURSEWORK

#### **SOFTWARE**

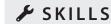
- Software Development
- Data Structures, Algorithims
- Embedded Systems Design

#### **ELECTRICAL**

- Analog and Digital Circuits
- Signals and Systems
- Electricity and Magnetism
- Electrical Circuits and Power

### **MECHANICAL**

- Statics
- Dynamics
- Thermal Systems Design



### **SOFTWARE**

- C/Embedded C
- Pvthon
- Bash Scripting (UNIX Shell)
- MATLAB
- Git
- Microsoft Office
- SQL

#### **DESIGN**

- Autodesk Inventor
- AutoCAD
- MultiSim (Schematic design)
- GrabCAD Workbench
- SolidWorks
- KeyShot (3D rendering)

## **ELECTRICAL**

- Microcontrollers
  - Arduino
  - Particle Photon
  - STM32L (ARM Cortex)
- Oscilloscope/Power Supplies
- Soldering
- Breadboard prototyping

### MANFACTURING

- CNC
- 3D Printing
- Lathe and Mill
- Sheet Metal
- Hand and Power Tools