

NATHAN GOODFELLOW

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EDUCATION

University of Toronto

(Class of 2017)

Bachelor of Applied Science

Mechanical Engineering
Minors in Mechatronics &
Engineering Business

Formula SAE Racing Team

(3 Years)

George Brown College

(2014)

Introduction to Welding
Basic Machining

TECHNICAL SKILLS

CAD & Analysis

Solidworks, Solid Edge, ANSYS

Programming Languages

C#, Python, Node.JS, MATLAB

Electrical

Soldering, Wiring

MCUs & Microprocessors

Arduino, Raspberry Pi

Machining

Lathe, Mill, TIG & MIG Welding

Applications

MS Office, SAP

WORK EXPERIENCE

SOFTWARE DEVELOPER

IBI Group, Toronto, ON | July 2018 – Present

- Providing R&D for IBI's Internet of Things (IoT) product offerings
- Conceptualizing and architecting data pipelines, which leverage multiple Microsoft Azure cloud-based platforms to drive the functionality of upcoming commercial platforms
- Designing and producing prototype IoT sensor devices that communicate with an onsite gateway, configured with an edge-level data pipeline consisting of custom-programmed modules
- Developed an internal corporate chat system web app (via Microsoft Bot Framework) to allow employees to access and manage various documents, information and services
- Successfully managed the creation of the chat system throughout all stages of development, from initial concept to company-wide release (over 2500 employees)
- Performed ongoing maintenance and testing while also developing upcoming features
- Led presentations for the CEO, senior management and additional company offices to provide direction and training, ensuring effective integration of the chat system

MECHANICAL ENGINEERING EIT

Lincoln Electric, Toronto, ON

MECHANICAL ENGINEERING INTERN

Jan – July 2018 & June 2015 – Sept 2016

- Designed custom mechanical & electrical systems (towbar locking system, strobe warning system, additional sensor harnesses) for the company's new line of ground power units (GPUs) according to individual client specifications
- Created the GPU's master CAD model as it entered its alpha and beta prototype phases, including making necessary DFM decisions based on process-related tolerancing, new hardware implementation and ease of assembly
- Collaborated closely with QA and production department managers to ensure engineering changes in the product design were properly implemented at the manufacturing level
- Developed production-level component and assembly drawings using GD&T best practices
- Analyzed and improved on-site manufacturing practices (e.g. shunt-coil winding system for the company's DC-generators within their engine-driven welding machines)
- Fabricated production-line manufacturing systems and fixtures in the company's on-site machine shop using traditional machining and sheet metal forming processes

ENGINEERING PROJECTS

ELECTRICAL & BRAKING SYSTEMS LEAD ENGINEER

University of Toronto Formula SAE, Toronto, ON | July 2014 – Aug 2017

- Conceptualized, manufactured and tested the pedal tray assembly, brake rotor assembly, electrical harnesses, dashboard system and electrical box
- Designed a live sensor readout and suspension setup tracking system for the vehicle's dashboard, which would allow on-track engineers to measure the vehicle's lap time performances as they related to the vehicle's toe and camber settings for various competition track layouts
- Worked alongside fellow vehicle section leads to validate system-level design decisions (e.g. steady-state rotor temperature to determine rotor design & brake pad material selection) using 2D Data Recording software in conjunction with calibrated sensors installed throughout the vehicle
- Led, managed and mentored team members regarding the vehicle's electrical and braking systems designs
- Significantly improved the team's design workflow by implementing a shared CAD model management system during the vehicle's design stages to produce necessary BOMs, as well as individual part and assembly drawings