

# Aidan Bruneel

SYSTEMS ENGINEER · EDUCATOR · COMPUTER PROGRAMMER

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## Technical Skills

Proficiency

Familiarity

### COMPUTER LANGUAGES

C++

C

MATLAB

Python

L<sup>A</sup>T<sub>E</sub>X

VBA

Java

Assembly

PLC

### TOOLS & APPLICATIONS

Arduino

SolidWorks

Catia V5

Visual Studio

Git

Jupyter

CMake

Simulink

### FRAMEWORKS & LIBRARIES

OpenCV

ArUco

NumPy

Pandas

Matplotlib

Unity

ROS

TensorFlow

## Education

### BESc Mechatronic Systems Engineering

WESTERN UNIVERSITY

London, ON

Sep. 2016 - Apr. 2021

- **GPA:** Overall = 3.7. Two-Year = 3.9.
- **Academic Awards:** Dean's Honour List (2021, 2019, 2017), The Western Scholarship of Excellence (2016).
- **Courses:** Robotic Manipulators, Control Systems, Embedded Systems, Microprocessors, Image Processing, Signal Processing.

## Work Experience

### Teacher of the Deaf

ROBARTS SCHOOL FOR THE DEAF

London, ON

Jan. 2022 - Feb. 2022

- **Instructed** classroom lessons and coding activities for Deaf students in secondary-level Mathematics, Science, and Technology.
- **Collaborated** with interpreters and students to establish clear vocabulary of scientific and technical concepts in English and ASL.

### Process Engineering Leader Intern

SCHAEFFLER CANADA, INC.

Stratford, ON

May. 2019 - Aug. 2020

- **Managed** process engineering projects in safety, quality, and productivity by planning and leading the work of multiple departments.
- **Conducted** studies on process repeatability, cycle time, downtime, machine faults, and reject rate to inform engineering decisions.
- **Improved** parameters, tooling, and technologies of production processes with a focus on cost savings and LEAN manufacturing.
- **Documented** thorough setup and testing procedures, parameter modifications, ongoing work requests, and actualized cost savings.

### Product Design Student Engineer

CONTINENTAL TIRE CANADA, INC.

Chatham, ON

May. 2018 - Aug. 2018

- **Applied** detailed GD&T to engineering drawings using CAD for machinists to manufacture fixtures and performance equipment.
- **Analyzed** thermal management product test data using data filtering algorithms and implemented into macros for company use.

### Product Testing Student Engineer

CONTINENTAL TIRE CANADA, INC.

Chatham, ON

May. 2017 - Aug. 2017

- **Designed** measurement fixtures to test powertrain product lines for vibration, pressure leak/vacuum, corrosion resistance, etc.
- **Presented** test results to product design engineers using data visualization to inform design and specification revisions.

## Projects

### Haptic Guidance System to Assist Blind Persons to Locate Points of Interest

WESTERN UNIVERSITY

London, ON

Sep. 2020 - Apr. 2021

- **Developed** 3D camera pose estimation vision system which directs blind users via a haptic wearable to navigate indoors.
- **Integrated** Bluetooth communications from smartphone app hosting C++ OpenCV vision system to Arduino haptic wearable.
- **Empowered** users to confidently locate specific points of interest indoors without the use of vision or hearing with **90.32%** success.

### Production Launch of Honda Wheel Bearing

SCHAEFFLER CANADA, INC.

Stratford, ON

May. 2019 - Aug. 2020

- **Prepared** existing automated assembly line for new Honda product by reworking tooling/parameters and training production staff.
- **Investigated** root causes of failure to meet customer specifications and proposed product design and process improvements.
- **Implemented** process improvements while adapting to changes quickly to bolster customer rapport and prevent downtime costs.

## Interests

Technical

Non-Technical

Robotics

Systems Design

Computer Vision

Virtual/Mixed Reality

Education

Psychology

Accessibility

Audio Processing

Computational Linguistics

Human-Computer Interaction

Photography

Music Production

Data Science

Deep Learning

User Experience

dApps

Finance

Philosophy

Reading

Writing

Jiu Jitsu