# Mackenzie Wilson

3A Engineering

mackenziewilson@runbox.com
mackenziewilson.ca
+1 647.290.0836

## SKILL SUMMARY

- Designs informative experiments and performs detailed data analysis (Python, R, Excel, etc.).
- Forms effective requirements, specifications and decisions based on research and data.
- Natural project leader and team player with outstanding communication skills.
- Extensive development experience in Python, Matlab, C#, C++, Javascript.
- Proficiency with mechanical design (Solidworks), cabling, and circuitry.
- Co-op Student of the Year 2017 nomination due to superior initiative and problem solving.

## EXPERIENCE

**R&D and Hardware Specialist**, P&P Optica – *Aug 2017-Jan 2018*

- Researched, sourced, and tested technology to be included in new designs.
- Made informed design decisions, redefined system requirements and developed sub-system specifications based on data analysis (Python, Excel).
- Coordinated the integration and installation of large systems in Ontario food plants.
- Developed new parts (Solidworks) and redefined the growing production facility workflow.

**Optical Systems Engineer**, Synaptive Medical – *Jan-Apr 2017*

- Improved system performance and algorithm efficiency through factorial experiment design.
- Developed streamlined production processes for newly designed parts and tools.
- Sourced, specified, and designed (Solidworks) new optical system components.

**Research Assistant**, Vision and Image Processing Lab – *May-Dec 2016*

- Designed experiments to test a novel infrared-imaging system for performance and quality.
- Optimized and redesigned electrical and optical subsystems based on data analysis (Matlab).
- Published a conference paper and presentation on novel biomarker imaging technology.

## PROJECTS

**"NatalNet"** App, Break Inequality Hackathon – *Nov 2016*

- A web app to allow mothers and healthcare workers to interact in rural developing areas.
- Integrated JavaScript (Node.js), No-SQL database, front-end (HTML/CSS) and given APIs.
- Gave 1st-place prize-winning pitches and managed the project requirements and scope.

**"Stair Tracker"** Signal Processing Project – *May-Jul 2017*

- Processed cell-phone accelerometer data to apply theoretical signal theory concepts.
- Developed algorithms (Python, Jupyter) to analyze frequency and time domain signals.
- Managed team tasks, developed algorithm requirements and presented design decisions.

**"AntiFreeze"** Freezing of Gait Prevention Project – *Sep-Nov 2016*

- A wearable to detect the onset of Parkinson's freezing of gait and counteract it in real time.
- Led the circuit design and delegated software (C) and mechanical subsystem tasks.

## LEADERSHIP

Community Kids' Softball Head Coach; Orientation Week Leader; Engineering Society Director

## EDUCATION

Candidate for B. A. Sc., Biomedical Engineering; University of Waterloo – *2015-2020*

## INTERESTS

Hiking, canoeing, furniture refurbishing, craft beer, softball, sci-fi novels, photography