

# IMRAN JAMEEL

www.imranjameel.com | imran.jameel@mail.mcgill.ca

## EDUCATION

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### McGill University, Montreal, Canada

B.Eng. Mechanical Engineering (Design), Minor in Technological Entrepreneurship Sept 2013 – Present

- **Relevant Coursework:** Engineering Design (Conceptual, Graphical/CAD, Machine Elements), Materials Engineering, Principles of Manufacturing, Mechanics of Materials, Engineering Statics, Engineering Dynamics, Thermodynamics, Statistics and Measurement, Computers in Engineering (C Programming/ MATLAB), Engineering Economics/ Finance, Marketing Management, Technology Business Plan Design.

## SKILLS

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**Computer:** CAD (SolidWorks), CAM (MasterCAM), **Programming** (C, MATLAB, Arduino, Python, HTML, CSS, JavaScript, Node.js, LaTeX, LabVIEW, Git Workflow), **Software** (MS Office Suite)

**Fabrication:** *Machining* (CNC Mill, Lathe, Band Saw), *Rapid Prototyping* (3D Printing, Breadboarding, SMD Soldering)

## EXPERIENCE

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### Aero Drones Design Team, McGill University – Montreal, Canada

*Mechanical Engineering Team Lead*

Sept 2015 – Present

- Lead all mechanical design, manufacturing and testing for the team of 20 students building a hexacopter according to the 'Unmanned Aircraft Systems' competition guidelines.
- Delegate work to and solve problems with 10 members of the Structures and Propulsion sub team.
- Design the drone assembly and payload mechanism with SolidWorks for FEA, dynamic modeling, 3D printing, machine drawings and simulations.

### Rhodium - Product Design & Engineering Consultancy – Montreal, Canada

*Product Design Engineer*

Sept 2015 – Present

- Participate in brainstorming, contextual observations, prototyping, engineering analysis, documentation, and other aspects of the 'design thinking' and 'human-centered design' process approach.
- Facilitate interactions between clients, hardware partners, and an interdisciplinary team of engineers, designers, researchers, and strategists to streamline product development and meet client deadlines.

### reelyActive – Montreal, Canada

*Systems Integration Engineering Intern*

May 2015 – Aug 2015

- Awarded NSERC Industrial Undergraduate Student Research Award (IUSRA) towards research & development.
- Engineered a software library in Node.js to decode BLE advertising packets and developed its web-app with AngularJS.
- Project code was reviewed, pushed, and is now marketed globally by the company.
- Submitted a scientific paper on research conducted to the 2<sup>nd</sup> IEEE World Forum on Internet of Things (WF-IoT) and published in conference proceedings.

### MACES Computer Lab, McGill University – Montreal, Canada

*IT Consultant*

Sept 2014 – April 2015

- Provided technical support, troubleshooting assistance, and was involved as a cashier attendant.
- Simplified complex technical processes in simple layman terms through consultation with students and faculty.

### 3M – Colombo, Sri Lanka

*Project Management Intern*

July 2014 – Aug 2014

- Examined current traffic safety practices and remodeled a system for Class B roads that decreased costs by 10%.
- Documented a feasibility report on 3M Polycarbonate RPM's for implementation on Class B roads.
- Pitched proposal to 4 representatives from the Road Development Authority.

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## PROJECTS

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### Structural Design

#### Wooden Protective Structure for a Load Drop

MECH 201, McGill University - 2013

- Designed and constructed a structure that will protect a light bulb from being broken by multiple maple syrup cans dropped from a height of 3m, subject to several constraints.

### Mechanism Design

#### Folding Garage Mechanism for an Outdoor Garage

MECH 290, McGill University - 2015

- Designed a mechanism for lifting and lowering the awning bar of a folding garage.
- Produced 3D CAD models & manufacturing BOM using SolidWorks.

#### Robot Putter for Golf Balls

MECH 292, McGill University - 2015

- Assisted with the design and construction of a Bluetooth RC robotic car made to pickup a golf ball, carry it up a 30-degree incline and drop it into a hole.

### Mechatronics Design

#### Smart Insole for Gait & Applied Behavior Analysis

Penn Apps, University of Pennsylvania- 2015

- Built a wearable GRF sensor system using force sensors and carried out kinetic analysis to characterize human locomotion.
- Developed a web based application to find correlations between human gait activity and several quantifiable lifestyle parameters such as weather patterns, number of events, music and geolocation.

#### EEG Headband to Reduce Anxiety/Stress & Induce Calmness

Angel Hack, Montreal - 2015

- Devised a brain soothing headband with electrodes and an OpenBCI using basic signal processing and the science behind SSVEP to measure and stimulate brain activity.
- Developed a web based application which makes you aware of brain activity in real time and offers audio and visual stimuli based on your brain activity to induce calmness.

#### Biometric Socks for Telemedicine

WearHacks, Toronto - 2015

- Fabricated a smart-sock known as Sensock using IR and temperature sensors to measure vitals such as heart rate and body temperature, as well as a force sensor for haptic feedback to page a doctor via a text message.

#### Smart Lighting for the Differently Abled

YHack, Yale University - 2014

- Built a smart home lighting solution with the Intel Galileo microprocessor and standing LED lamps allowing for gesture based light control by arm movements via a Myo Armband integration.

#### EMG Armband as a Musical Instrument

WearHacks, Montreal - 2014

- Engineered a gesture based virtual musical instrument via the Myo armband linked to a MIDI player to play musical instruments such as a drum-set without the need for purchasing one.
- Presented project at Google (Montreal), WeAreWearables (Toronto), and Tech@D (Montreal).

## HONORS & ACTIVITIES

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Engineering Ambassador, McGill Dobson Centre for Entrepreneurship	2015/2016
NSERC Industrial Undergraduate Student Research Award	2015
1st Place, Best Use of Nest Labs API, Hack The Planet, Silicon Valley	2015
1st Place, Best BCI Project, Angel Hack	2015
Campus Ambassador, Canadian Undergraduate Technology Conference (CUTC)	2015
1st Place, Most Innovative IoT Project by Intel, YHack, Yale University	2014
1st Place, Best Thalmic Myo Project, WearHacks, Montreal	2014
Semi Finalist, McGill Dobson Cup Start-up Competition	2013-2014
Technology Panel, Harvard Program for Asian & International Relations (HPAIR)	2014

## PUBLICATIONS

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- M. Jameel and J. Dungen, "Low-Power Wireless Advertising Software Library for Distributed M2M and Contextual IoT", at the *2nd IEEE World Forum on Internet of Things (WF-IoT)*, Milan, Italy, 2015.