Arsalan **Barolia**

Master's in Biomedical Engineering

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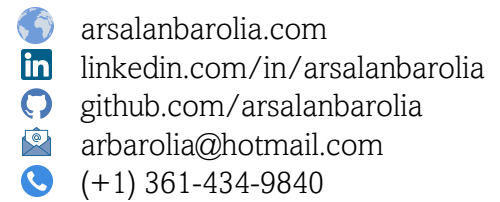
A recent Biomedical Engineering graduate pursuing a career focusing on advances in technology and medicine, to design and innovate new devices and equipment. Currently seeking an opportunity where I can be mentored and work with a team of experienced professionals to positively contribute to improving human health.

EDUCATION

Ryerson University
M.Eng., Biomedical Engineering
Sept. 2020 – June 2022
GPA: 3.8 / 4.0

Carleton University
B.Eng., Biomedical & Electrical Eng.
Minor: Computer Science
Sept. 2015 – Dec. 2019
Award: President's Scholarship

SKILLS

Development

- MATLAB, Simulink
- AutoCAD
- Xilinx, Splice
- C, C++
- Verilog, VHDL
- HTML
- Java
- Python
- Data Structures
- EAGLE (PCB & Electrical Design)
- Creo Parametric (PTC)

Knowledgeable in:

- Watchman Devices
- Lead & Leadless Pacemakers
  - Micra A & Micra VR
- Transcatheter Aortic Valve Replacement (TAVR)
- HeartWare Ventricular Assistive Device (HVAD) Pump
- Implantable Cardiovascular-Defibrillator (ICD)

RESEARCH PROJECTS

- Higher Tachycardia Prevalence in a Smoker's Pacemaker (Link)
- Security Challenges for Healthcare Applications Regarding Body Area Network (Link)
- tDCS Electrical Brain Stimulation (Link)
- Image Denoising Using Sparse Representation (Link)
- Postural Effects on an Individual's RSA (Link)

WORK EXPERIENCE

Surgical Operational Efficiency Specialist (SOES)　　　　Dec. 2022 – Present
KARL STORZ, Austin TX

- Closely work with surgeons, OR, SPD, and biomedical staff to ensure **robotic** and **endoscopic** surgeries are in good working order and ready for use including documentation of their functionality. Being **vendor neutral,** we are responsible for troubleshooting and using various surgical instrumentation from **Medtronic**, **Intuitive**, **Karl Storz**, **Stryker**, etc.
- Constantly have an open mind for design process improvements to achieve maximum efficiency and reduce repair costs and instrument damage. Display effective communication with our diverse clientele through good written, oral, and interpersonal skills while performing complex and time-critical tasks in high-pressure situations.

Biomedical Engineering Exposure Internship　　　　Oct. 2022 – Dec. 2022
Coastal Cardiology, Corpus Christi TX

- Interacted with **Medtronic** equipment and received the opportunity to observe the surgical deployment of various biomedical devices such the **WATCHMAN** implantation device, the world's smallest leadless pacemaker (**Micra**), and the transcatheter aortic valve replacement (**TAVR**).
- Diligently worked and shadowed one of highest demanding cardiologists by observing the analysis of echocardiograms and the appropriate course of action for cardiovascular implantation.

EPIC Implementation & Clinical Support　　　　May 2019 – Aug. 2019
Ottawa Heart Institute, Ottawa ON

- One of 8 lead employees chosen and trained in **EPIC Hyperspace** which embodied **a fully integrated**, patient-centered, **electronic medical records** (EMR) management tool to help provide smarter, more efficient, and all-around better healthcare for patients.
- Responsible for collaboratively working and guiding nurses and physicians in the Critical Care Unit to navigate through EPIC, a global healthcare leader in software development, while actively making constant modifications to EPIC to improve overall functionality and ease of use.

Manufacturing Engineering Intern　　　　May 2018 – Aug. 2018
GasTOPS Ltd., Ottawa ON

- Closely worked with the lead manufacturing engineer to completely reinvent the out-of-date sensor documentations while also modifying the production workplace, using **A3**, **5S**, and other **lean methods**, to optimize the yield of production goods.

DESIGN PROJECTS

Intelligent Telepresence Assistive Device (iTAD): Bio-Robotics (Link)　　　　Sept. 2018 – Apr. 2019
Mobility & Systems Lead – 25 Members

- Designed and manufactured a PCB, on EAGLE, to allow the PWM and ODROID to communicate with each other while simultaneously focusing on wire management of the other components.
- Worked with other members to help make different types of wires and connectors, like Molex and DuPont, as well as making the arm functional.

Muscle Powered Flappy Bird (Link)　　　　Sept. 2017 – Dec. 2017
Schematic Designer & Circuitry Assembler – 2 Members

- Assembled and designed a circuit to amplify an electromyogram (EMG) signal to play an adapted Flappy Bird game with each muscle flex sensed as the input.
- Worked with various electrical hardware such as a breadboard, potentiometer, converter chip, OP97/OP297, opto-isolator, relay, instrumentation amplifiers, 555 timers, and diodes.