Jonathan-F. Baril, P.Eng.

Data Scientist

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Education

University of Toronto — *Toronto, Canada*

MHSc, Clinical Engineering — *Sep 2016 - Nov 2018*

GPA: 4.0/4.0 | Thesis: Supervised Machine Learning Classification of Heart Failure Patients

University of Manitoba — *Winnipeg, Canada*

BSc, Electrical Engineering (with Distinction) — *Sep 2009 - May 2014*

GPA: 4.33/4.5 | Co-op Program, Arts Minor

Relevant Work Experience

FM Global — *Toronto, Canada*

Loss Prevention Consultant/Engineer — *Apr 2019 - Present*

- Assessed & identified property & business interruption risks at client facilities.
- Consulted, fcoached & sold clients on performing property risk improvements at their site.

eHealth Innovation @ University Health Network — *Toronto, Canada*

Research Analyst Student (part time) — *Sep 2017 - Sep 2018*

- Analyzed, cleaned, and processed telehealth smartphone app usage data.
- Tools: Python (numpy, pandas), Google Analytics, Excel/Power BI

Healthcare Human Factors @ University Health Network — *Toronto, Canada*

Human Factors Student Intern — *Jan 2017 - Apr 2017, Jan 2018 - Apr 2018*

- Facilitated $0.5M, 60+ participant, multi-device usability evaluation (in the United States) under very tight deadlines.
- Evaluated medical device usability, designing & proposing changes to improve user interface & user experience.
- Created database to help track and identify eligible human factors study participants.
- Tools: MySQL, HTML/CSS/Javascript

University of Toronto — *Toronto, Canada*

Teaching Assistant (CSC444: Software Engineering I) — *Sep 2017 - Dec 2017*

- Mentored students in using agile software engineering principles to create a functional web service.

Nova 3 Consulting Engineers — *Winnipeg, Canada*

Electrical Engineer-in-Training (temp) — *May 2016 - Aug 2016*

- Engineered fire/emergency, HVAC control, lighting & power distribution systems for healthcare & other occupancies.
- Designed & drafted electrical plans total >$150k in billables.

University of Manitoba — *Winnipeg, Canada*

Freelance Research Assistant — *May 2014 - Jun 2015*

- Implemented iOS app for monitoring wounds/bedsores. [1]
- Mapped & analyzed the brain connectivity networks of epileptic patients during various sleep stages. [2]
- Tools: Objective-C, XCode, MATLAB

Ravensburg-Weingarten Uni. of Applied Science — *Weingarten, Germany*

Visiting Scholar — *May 2013 - Aug 2013*

- Repaired the control system (C++) of a remote-controlled rover as part of an international cross-disciplinary team.

Parker Hannifin (Electronics Control Division) — *Winnipeg, Canada*

Electronics Engineering Intern — *Sep 2011 - Aug 2012*

- Oversaw creation & verification of production prototypes, including multiple $40k custom training interfaces.
- Performed design verification testing including electromagnetic compatibility, electrostatic discharge, alarm sound intensity, thermal & load testing.
- Creating database to track prototypes and test equipment.
- Tools: MS SQL, MS Access

University of Manitoba *Winnipeg, Canada*

NSERC Undergraduate Research Assistant *May 2011 - Aug 2011*

- Analyzed time-series data producing peer-reviewed paper.
- Tools: MATLAB, signal processing toolbox (pwelch, spectrogram), standard I/O & plot libraries.

Federated Insurance *Winnipeg, Canada*

Junior Automated Rating Analyst *Summers 2008 - Aug 2010*

- Maintained underwriting algorithms ensuring pricing accuracy & regulatory compliance.
- Trained & mentored junior summer hires.

Skills & Interests

Skills: test1, test2, test3

Interests: test1, test2, test3

Honors & Awards

Design & Research Awards

2017 **Canadian Graduate Scholarship (CGS-M),** Canadian Institutes of Health Research (CIHR)

2016 **Ontario Graduate Scholarship (OGS),** University of Toronto

2014 **B.Sc. Design Project 2nd Place Award,** University of Manitoba IEEE Chapter

2014 **Outstanding Final Year Project,** Winnipeg IEEE Young Professionals

2011, 2014 **Undergraduate Research Award,** National Sciences and Engineering Research Council (NSERC)

Leadership Awards

2013 **Easton I. Lexier Aware for Community Leadership,** University of Manitoba

2012 **William & Olive Humphrys Scholarship (Elec. Eng.),** University of Manitoba

2012 **Ernest M and Margaret Scott Memorial Scholarship,** University of Manitoba

2010 **Engineering Class of 1946 Scholarship,** University of Manitoba

Academic Awards

2009-2014* **President Scholar,** University of Manitoba **exempted during internship*

2009-2014* **Dean's Honor List,** University of Manitoba **exempted during internship*

2013 **Baden-Wuerttemberg (BW) Stipendium,** BW Foundation

2009 **Advanced Placement Enhancement Scholarship,** University of Manitoba

2009 **Queen Elizabeth II Entrance Scholarship,** University of Manitoba

2009 **Advanced Placement (AP) International Diploma,** College Entrance Examination Board

2009 **Advanced Placement (AP) National Scholar,** College Entrance Examination Board

Volunteering

Biomedical Engineering Student Association (University of Toronto) *Toronto, Canada*

University Affairs Representative (Elected) *Sep 2017 - Sep 2018*

- Represented association at various university/departmental/union meetings.
- Planned & facilitated annual general meeting.
- Piloted program to improve communication to student body.

Discovery Program (University of Toronto) *Toronto, Canada*

Facilitator *2016, 2018*

- Facilitated CAD & 3D printing design workshop activities designed to introduce high school students to biomedical engineering research.

Youth with a Mission *UK, Italy, Greece, & Central Asia*

Short-Term Volunteer *Jun 2015 - Dec 2015*

- Supported local relief work for Syrian refugees & local disadvantaged people groups.
- Taught English as a foreign language to local students.
- Modernized local accounting and budgeting system.

University of Manitoba Biomedical Engineering Society *Toronto, Canada*

Executive & Founding Member *2012 - 2014*

- Established strategic direction including drafting group constitution.
- Organized and facilitated annual outreach event to promote biomedical engineering to 1st year students.

Publications & Publicly Available Work

[1] J.-F. Baril and et al., "SmartWoundCare (iOS App, v1.0)," Winnipeg, 2015.

[2] S. Baghbani, J.-F. Baril, and et al., "Synchronization Metrics and the Sleep-Wake EEG Brain Connectome," Winnipeg, 2015.

[3] J.-F. Baril and et al., "Use of Free-Living Step Count Monitoring for Heart Failure Functional Classification: Validation Study," *JMIR Cardio*, vol. 3, no. 1, p. e12122, May 2019.

[4] J.-F. Baril, "The Use of Activity Monitoring and Machine Learning for the Functional Classification of Heart Failure," Master's thesis, Uni. of Toronto, 2018.

[5] S. Sarraf-Shirazi, J.-F. Baril, and et al., "Characteristics of the swallowing sounds recorded in the ear, nose and on trachea," *Med. Biol. Eng. Comput.*, vol. 50, no. 8, pp. 885–890, Aug 2012.

[6] J.-F. Baril and et al., "Design and Implementation of a Framework for Remote Automated Environmental Monitoring and Control," 2014.