

# Matteo Aiello

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703 33 St NW

Calgary, AB

T2N 2W7

## Education

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### University of Victoria

*Bachelor of Engineering (BEng): Mechanical Engineering*

*Pursuing a Specialization in Energy Systems*

Victoria, BC

2017-Present

## Work Experience

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### Systems Engineering Co-op – Corvus Energy Inc.

January – May 2019 | Richmond, BC



- Assembled and utilized a thermocycling test jig to simulate strain/stress on a Corvus lithium-ion battery module from thermal expansion differentials
- Developed python scripts to plot/evaluate resistance data from a welded-tab battery jig DAQ in MATLAB
- Safely operated machining tools to complete various tasks (lathe, mill, drill press, band saw, etc.)
- Used Solidworks CAD to model and design various battery module jigs and parts, and used FEA to address stress cracks on prototype laser-welds
- Designed and reported a new method of vibration-testing to mimic operational fatigue of electrical components and analyze integrity

### Sustainable Energy Engineering Co-op – Crescent Point Energy Corp. (CPG)

May – September 2018 | Calgary, AB



- Assisted with and provided research for multiple projects with aim to reduce company carbon intensity (emissions/production). Focused primarily on solar, wind energy and power reduction
- Performed economic modelling, emission projections/environmental impact, power savings, and CAD layouts to help assess the feasibility of new projects. Worked with PFDs, P&IDs, and Vizio.
- Utilized the laws of fluid mechanics and thermodynamics to make calculated projections for heat exchangers in CPG production territories

## Project Experience

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### Autonomous Robot-Prototype – University of Victoria

Handled the mechanical/electrical design and optimization of an autonomously programmed VEX prototype in response to an RFP. It navigated its surroundings using ultrasonic sensors and IR phototransistors.

### Laser Weld Integrity Testing – Corvus Energy Inc.

Designed and executed a comprehensive test plan to assess prototype weld designs on thermocycling jigs to simulate strain/stress of module operation. The jigs were a part of microcontroller-integrated systems.

### IoT Security Enhancements – Edgetech Computing

Designed an Arduino-based solution to protect security cameras. The Arduino receives input from a piezo-electric vibration sensor when the camera is physically disturbed and transmits an alarm to a security team via local Wi-Fi.

### Renewable Energy R&D – University of Victoria

Delivered a technical research report on Direct Air Capture (DAC) technology and its science, feasibility.

### Vibration Testing Model – Corvus Energy Inc.

Established a method of accelerated-life testing for vibrational fatigue of shipboard batteries.

## Technical Skills

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- **Design** – skilled at designing spreadsheets and engineering drawings. Experienced in Solidworks, AutoCAD, Microsoft Vizio, PFDs, P&IDs, LabView.
- **Testing** – able to produce and evaluate smart test cases to analyze variables of time, economics, materials, and efficiency. Experienced in Finite Element Analysis (FEA), Ansys and Solidworks Simulation.
- **Software/Systems** – fundamental programming competency in C, MATLAB, Java, and Python. Proficient in Microsoft Office. Familiar with various software development environments/practices (ex: Github).
- **Research** – able to gather/sort information effectively from various resources to isolate important concepts. Past personal research reports available upon request.
- **Mechanical** – hands-on experience with advanced electrical hardware, circuitry, battery modules and machining tools/equipment.

## Workplace Skills

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- **Technical Writing** – able to generate clear and concise reports
- **Teamwork** – comfortable working with teams in every setting, willing to lead or follow other's direction as required by situation
- **Organization** – maintained high academic standards throughout education whilst participating in various sports/extra-curricular activities and clubs. Played junior hockey throughout Alberta and BC, managing academics and semi-professional sport away from home
- **Communication** – professional standard of communication held at all times, able to make effective presentations
- **Project Management** – able to effectively organize/prioritize a range of responsibilities/tasks
- **Leadership** – determined to lead and inspire others. Served as captain/leader for multiple hockey teams throughout a successful hockey career. Huge advocate for sustainable energy & mental health

## Volunteerism

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- **Community Leader/Athlete** – Served as a member of the community playing for the Fort McMurray Oil Barons Junior 'A' Hockey Club (semi-professional), participating in charity events, making speeches, and raising money to support the community's rebuild after the traumatic fires in 2016.
- **Student Representative** – Volunteered to participate as part of the student leadership group at the University of Victoria.

## Interests & Accomplishments

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### *Accomplishments:*

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| • University of Victoria Entrance Scholarship for Academic Excellence | 2017 |
| • Alexander Rutherford Scholarship                                    | 2017 |
| • Alberta Junior Hockey League Championship                           | 2016 |

### *Interests:*

- Renewable Energy Solutions, Mechatronics, Computer-Integrated Engineering
- Hockey, Skiing, Guitar, Photography, Fashion, Fitness, Art, Organizing, Fantasy Sports

## References

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- ❖ **Scott McNally** – Green Energy Advisor, Crescent Point Energy. Harvard, Stanford Graduate
- ❖ **Shawn Hanna** – Systems & Reliability Engineer, Corvus Energy,  
(Contact information available upon request).