

# JOSHUA DONALDSON

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## CHEMICAL ENGINEER | PROCESS ENGINEER

Proactive and solutions-driven professional with strong career interests in the areas of chemical and process engineering. Highly adept at leading engineering projects from conception through to production. Provides on-going recommendations for efficiencies that cut costs, save on resources and improve bottom line profits. Offers a strong willingness to go above and beyond while providing creative solutions that enhance daily operations. Currently seeking to leverage such skills to support plant and manufacturing operations within the oil & gas, mineral processing or chemical industries.

- **Chemical Engineering**
- **Process Control & Design**
- **Project Management**
- **Process Engineering & Design**
- **Data Analysis & Reporting**
- **Teamwork & Collaboration**
- **Contractor Relations**
- **Client Relationship Management**
- **Public Speaking & Presentations**

**Technical Proficiencies:** ASPEN Plus, PI Process Book, Microsoft Office Suite, SAP, Python, Golang, Java, JavaScript, Git, SQL, MATLAB

### Professional Experience

**2019 to 2020 • UNIVERSITY OF BRITISH COLUMBIA | CYANARA CAPSTONE DESIGN • Vancouver, BC, Canada**

*The University of British Columbia is a global public research institution ranked among the top three for performance in Canada.*

#### **Team Member** (2019 to 2020)

In this engineering design and controls-oriented role, participate in the development of a new plant to address and treat cyanide leaching in gold mines using pure Sulphur dioxide.

- *Design the control scheme and narrative surrounding the combustion of Sulphur using pure oxygen.*
- *Accurately size equipment to include reactors, melting tanks, pumps, and filters.*
- *Create Process Flow Diagrams (PFDs), Piping and Instrumentation Diagrams (P&IDs) and other drawings vital to the plant's design.*
- *Conducted a hazard and operability study (HAZOP) on P&IDs to reveal areas of improvement.*

#### **Project Captain | Advisor** (2017 to 2020)

Lead a design team comprised of 15 students within the UBC Envision Brewing Project. Oversee the continuous development of innovative technology for the home brewing industry.

- *Manage daily project activities to include team leadership, research, quality control, and data analysis.*
- *Cultivate relationships with sponsors, acquire funding and author standard operating procedures to support ongoing development activities.*
- *Presented the objectives of the project to 100+ constituents during the 2017 Annual American Institute of Chemical Engineering Conference.*
- **Noteworthy Accomplishment** - *Designed an automated brewing system with Raspberry Pi based pH, temperature and gravity sensors with the ability to sync application information in real-time.*
- **Noteworthy Accomplishment** – *Project received formal recognition and press within the Globe and Mail newspaper.*

**2019 • RIO TINTO ALCAN • Kitimat, BC, Canada**

*Rio Tinto Alcan is a global mining and exploration company that processes natural mineral sources.*

#### **Carbon Process Co-op | Process Engineer**

Reported directly to the Carbon Process Coordinator and maintained responsibility for ensuring high-quality production and carbon processing. Supervised and motivated operators across four work shifts. Monitored process performance and presented findings, including KPI results, to senior leaders and technical team members.

- *Identified areas of improvement within daily workflows; created automated Smart data sheets to report on process parameter data, streamlining processes.*
- *Provided equipment and process troubleshooting support, took accurate induction furnace refractory measurements, made cast iron recipe and chemical adjustments, and initiated start-up anode inspections.*

- *Successfully coordinated the largest cost savings initiative of the year—the Alumina Recycling Program—saving the company an estimated \$4.5MM over four years.*
- *Led further cost savings of \$300K per year by implementing a steel recycling program in the induction furnaces.*
- **Noteworthy Accomplishment** - *Served as Project Manager for the Contaminated Alumina Recycling project; leveraged knowledge of Kaizen and Black Belt methodologies to review existing equipment, identify improvement opportunities to support recycling activities and achieve cost savings.*

**2018 to 2019, 2020 to Present • CRAFT METRICS • Vancouver, BC, Canada**

*Craft Metrics specializes in sensor analytics and data mining to support a wide portfolio of craft beverage industry clients.*

## **Quality Control Engineer**

Onboarded to support the engineering domain within a start-up environment. Provided technical support, subject matter expertise and insights that quickly moved the company to achieve profitable performance.

- *Successfully pitched products and services to acquire new clients in the academic and industrial domains; provided support to a portfolio comprised of 30+ customers.*
- *Contributed to DevOps processes by ensuring the seamless implementation and quality control of newly developed software systems.*
- *Created a new data cleaning and batching algorithm resulting in increased customer adherence and revenue generation; further developed an algorithm to model fermentation systems using reaction kinetics in industrial breweries.*
- **Noteworthy Accomplishment** - *Lent expertise as a Project Coordinator and Inventor during the FermTools research project; leveraged Python to analyze and compare fermentation batches resulting in the development of a machine learning algorithm that improved the accuracy of time-series data streams during batch processing.*

## *Volunteerism*

**KELOWNA ACTORS STUDIO, KELOWNA, BC, VANCOUVER • Stage Manager (2012-2014) |** In this leadership role, ensured seamless operations within a fast-paced theatre setting. Led a team of cast and crew members through a successful run, addressed challenges during the run, reported on findings to owners and directors, and implemented changes to achieve a successful show.

## *Education & Training*

**UNIVERSITY OF BRITISH COLUMBIA • Bachelor of Science – Chemical Engineering (Process Specialty)**

**RELEVANT COURSES • Process Control, Chemical Engineering Laboratory, Chemical Engineering Thermodynamics, Fluid Mechanics, Heat Transfer, Interfacial Phenomena, Electrochemistry, Chemical Engineering Process Design, Process Synthesis, TensorFlow, DevOps**

## *Professional Affiliations*

**ENGINEERS AND GEOSCIENTISTS OF BRITISH COLUMBIA (EGBC) • Engineer-in-Training**

**AMERICAN INSTITUTE OF CHEMICAL ENGINEERING (AIChE) • Member**

**AMERICAN SOCIETY OF BREWING CHEMISTS • Member**