# Kiernan McGuigan

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## Education

**Schulich School of Engineering, University of Calgary** Calgary, Alberta

**Bachelor of Science, Software Engineering** September 2017 – April 2022

- Received a University of Calgary Intern of Merit recognition based on feedback from leaders at Cenovus Energy.
- Completed several technical engineering courses in: Software Design and Architectures, Development Lifecycles and Effective Project Management, Algorithms and Complexity Analysis, and Software Testing.

## Experience

**Cenovus Energy** Calgary, Alberta

***Software Engineering Intern*** July 2020 – August 2021

- Improved the process of picking geological layers from well logs by developing a deep learning pipeline to automate this task. This has applications in increasing efficiency in current workflows, validating existing data, and in competitor analysis workflows to analyze the performance of non-Cenovus assets.
- Designed graphical user interfaces allowing users to validate as well as adjust geological predictions.
- Leveraged technologies: Python, TensorFlow, Scikit learn, XGBoost, Matplotlib, Seaborn, Tkinter.

**ENMAX Power** Calgary, Alberta

***LRP Summer Student*** May 2019 – August 2019

- Saved around three hours of engineering time per project by developing a Python program to generate project specific documents. Over the course of a year this this accounts for ~$60,000 in saved time for the organization.
- Saved between one and five hours of engineering time per project by developing a VBA script to validate the signatures on a batch of engineering drawings, detect missing information, and allow for batch edits to be done.
- Improved customer visibility by creating a Power Apps portal and dashboard to allow external customers to submit project requests, as well as visually see the status and progress of their ongoing projects in app.
- Leveraged technologies: Python, VBA, Power BI, Power Apps, Tkinter, Matplotlib.

***Control Center Summer Student*** May 2018 – August 2018

- Saved 100+ hours of engineering time per year by automating the change validation for devices on the electrical grid using python. This process increased accuracy in change discrepancy detection and allowed for the validation process to occur daily rather than monthly how it had been conducted prior.
- Improved electrical system operations by creating a Python program to analyze the protection and control system, comprised of over 300,000 devices, across the Calgary electrical grid. The program queried several SQL databases and analyzed the electrical compatibility and interactions of the devices on the grid.
- Leveraged technologies: Python, SQL, Excel.

## Notable Projects

**Green Energy Prediction Model**

- Developed a machine learning model to predict daily renewable energy generation on the Spanish electrical system. This project received first place in the 2021 ASEC Hackathon.

**Inventory Management System**

- Created a Java based inventory management system to allow a shop to track their inventory, calculate sales totals, and automatically generate order statements when the inventory of a good is low.

**Medical Residents Scheduling System**

- Worked with a partner to develop an intelligent scheduling system to be used by hospitals to schedule the shifts of their medical residents.

## Technical Skills

**Languages**

- Python, SQL, Java, C++, C, JavaScript, HTML, CSS, Git

**Frameworks & Technologies**

- TensorFlow, Scikit-learn, XGBoost, Bootstrap, Express, MongoDB