

# Desmond O'Brien

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## Education

### University of Calgary

*B.Sc. in Computer Science, B.A. in Economics*

*Calgary, AB*

*Sep 2018 – Jan 2025*

- Cumulative GPA: 3.54/4.0
- **Coursework:** Relational Databases and Distributed Systems, Computer Networking and Network System Security, Web Development, Algorithm Design and Analysis

## Experience

### Junior Systems Analyst Intern

*Calgary, AB*

*Bridgewater Bank*

*May 2023 – Sep 2024*

- Resolved over 80% of the team's annual ServiceNow ticket volume while managing SQL Server databases using T-SQL, SSMS, and SSIS for daily ETL processes
- Spearheaded the development of C# and .NET applications to optimize annual regulatory submissions including Basel Capital Adequacy Reporting and Leverage Ratio Requirements
- Designed and enhanced Power BI dashboards and Power Automate flows, reducing week-long reporting processes into afternoon tasks for Accounting and Operations teams
- Coordinated with internal shareholders and external vendors to develop, test, and deploy two major upgrades to the organization's core banking and mortgage servicing application

### Economist Intern

*Calgary, AB*

*Market Surveillance Administrator*

*May 2022 – Dec 2022*

- Provided econometric analyses in the [MSA's Q3 2022 report](#), predicting monthly customer departures from regulated retail options based on residential energy rates
- Authored a section of the [MSA's Q2 2022 report](#) exploring the evolving role of energy storage assets and battery technology in Alberta's market for operating reserves
- Expanded the organization's ability to monitor generator outages by developing data-visualization software in Python to illustrate energy restatements submitted by generators through time
- Enhanced the MSA's surveillance of Alberta's energy forward contract markets by developing two new data pipelines implemented in R, Python, and PostgreSQL

## Projects

### NLP and LLM Fake News Detection

*[GitHub: FakeNewsNLP](#)*

- Developed and tested machine learning models to compare conventional natural language processing feature extraction against large language model embeddings in the detection of fake news content
- Tools Used: Python, Sci-Kit Learn, Pandas, Textblob, VADER, BERT, GPT3

### Retail Renaissance

*[GitHub: RetailRen](#)*

- A database management web application with functionalities that include, but are not limited to, tracking items by trending sales volumes, ordering shipments from suppliers, and managing pending transactions
- Tools Used: Node.js, React.js, MySQL, CSS3, HTML5

## Technical Skills

**Application Development:** C/C++, C#, Java, Microsoft Windows, Linux, Unit Testing

**Data Science and Visualization:** Python, Sci-Kit Learn, Pandas, Keras, Plotly, Power BI, Excel

**Database Management:** Microsoft SQL Server, Oracle Database, Amazon Web Services

**Web Development:** Javascript, TypeScript, Node.js, React.js, Angular

**Version Control:** Git, GitHub, Azure DevOps