Project Portfolio

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B.Commerce (Hons) Recent Graduate

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Introduction

Who?

B.Commerce (Hons) Economics & Management Science recent graduate interested in strategy and community empowerment. As a driven and analytically-minded learner, I thrive on combining data and creativity to uncover insights that drive impactful decisions.

What?

This project portfolio showcases a curated collection of my academic and extracurricular projects, practical applications of theoretical knowledge, and tracks my impending activities.

Why?

As they say, **show don't tell.**
I believe that delivering this as a presentation can be considered a skill in itself and consider it an effective way to communicate the value I hope to bring to your team. After all, seeing is believing!

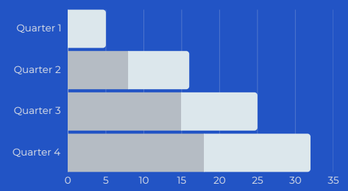
Skills Overview

Professional Skills

- Excel
- Data Analysis
- Python Packages - matplotlib, sci-kit learn etc.
- Database Querying & Management - SQL & NoSQL
- Machine Learning Algorithms
- Data Visualization - Tableau
- Financial Modelling and Analysis
- Organic and Paid Marketing
- Research and Development
- SPSS + R Programming for Statistical Analysis
- Microsoft Office & Google Suite Proficiency
- Report and Case Study Documentation

Personal Skills

- Interpersonal & Written Communication
- Creativity
- Teamwork & Collaboration
- Flexibility
- Problem-Solving
- Critical Thinking
- Curiosity
- Emotional Intelligence
- Growth Mindset



Microsoft x WITM Case Competition/Conference

Case Presentation Link

Overview:

- TMU's Women in IT Management (WITM) hosted the amazing 3-day EmpowerTech Conference and Case Competition that was sponsored by several companies including Microsoft Canada
- This conference (held at CIBC and MS headquarters) allowed us to hear several keynote speeches, participate in-depth Q&A's and learning sessions with industry professionals and network with students and recruiters

Problem to Solve:

- To design and pitch a solution for SafeHaven's accessibility challenges faced by their employees and clients while including the ADKAR change management model

Outcome:

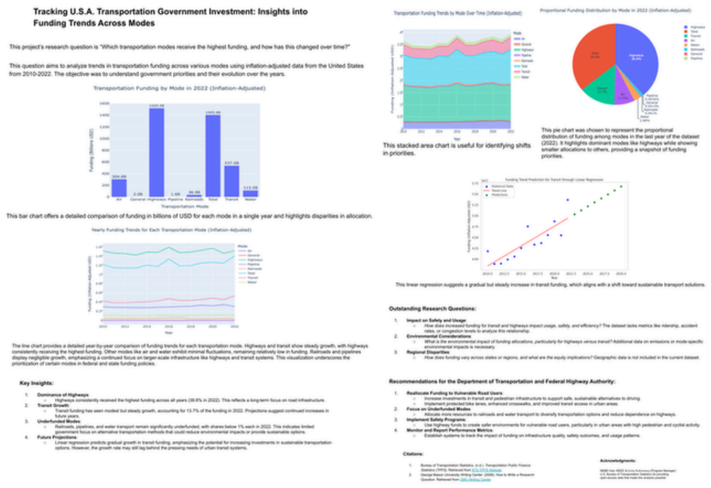
- Presenting to and receiving feedback from top Microsoft executives at their headquarters
- Learning and networking with over 15 global companies and startups

Skills Used:

1. Market Research
2. Design Thinking (with Accessibility in mind)
3. Pitch Presentation
4. Strategic Thinking
5. Communication w/ Judges & Teammates

Link: https://drive.google.com/file/d/1YHw8hCjKHFsu4Y0o_VKevfjHZrNmb4jM/view?usp=drive_link

Transportation Data Science Project


Tracking U.S.A. Transportation Government Investment: Insights into Funding Trends Across Modes

This project's research question is "Which transportation modes receive the highest funding, and how has this changed over time?"

This question aims to analyze trends in transportation funding across various modes using inflation-adjusted data from the United States from 2010-2022. The objective was to understand government priorities and their evolution over the years.

Transportation Funding by Mode in 2022 (Inflation-Adjusted)

This bar chart offers a detailed comparison of funding in billions of USD for each mode in a single year and highlights disparities in allocation.

Yearly Funding Trends for Each Transportation Mode (Inflation-Adjusted)

The line chart provides a detailed year-by-year comparison of funding trends for each transportation mode. Highways and transit show steady growth, with highways consistently receiving the highest funding. Other modes like air and water exhibit minimal fluctuations, remaining relatively low in funding. Railroads and pipelines display negligible growth, emphasizing a continued focus on larger-scale infrastructure like highways and transit systems. This visualization underscores the prioritization of certain modes in federal and state funding policies.

Key Insights:

1. Dominance of Highways:
   - Highways consistently received the highest funding across all years (38.8% in 2022). This reflects a long-term focus on road infrastructure.
2. Transit Growth:
   - Transit funding has seen modest but steady growth, accounting for 13.7% of the funding in 2022. Projections suggest continued increases in transit funding.
3. Underfunded Modes:
   - Railroads, pipelines, and water transport remain significantly underfunded, with shares below 1% each in 2022. This indicates limited government focus on alternative transportation methods that could reduce environmental impacts or provide sustainable options.
4. Future Projections:
   - Linear regression predicts gradual growth in transit funding, emphasizing the potential for increasing investments in sustainable transportation options. However, the growth rate may still lag behind the pressing needs of urban transit systems.

Transportation Funding Trends by Mode Over Time (Inflation-Adjusted)

This stacked area chart is useful for identifying shifts in priorities.

Proportional Funding Distribution by Mode in 2022 (Inflation-Adjusted)

This pie chart was chosen to represent the proportional distribution of funding among modes in the last year of the dataset (2022). It highlights dominant modes like highways while showing smaller allocations to others, providing a snapshot of funding priorities.

Funding Trend Prediction for Transit through Linear Regression

This linear regression suggests a gradual but steady increase in transit funding, which aligns with a shift toward sustainable transport solutions.

Outstanding Research Questions:

1. Impact on Safety and Usage:
   - How does increased funding for transit and highways impact usage, safety, and efficiency? The dataset lacks metrics like ridership, accident rates, or usage statistics to analyze this relationship.
2. Environmental Considerations:
   - What is the environmental impact of funding allocations, particularly for highways versus transit? Additional data on emissions or mode-specific environmental impacts is necessary.
3. Regional Disparities:
   - How does funding vary across states or regions, and what are the equity implications? Geographic data is not included in the current dataset.

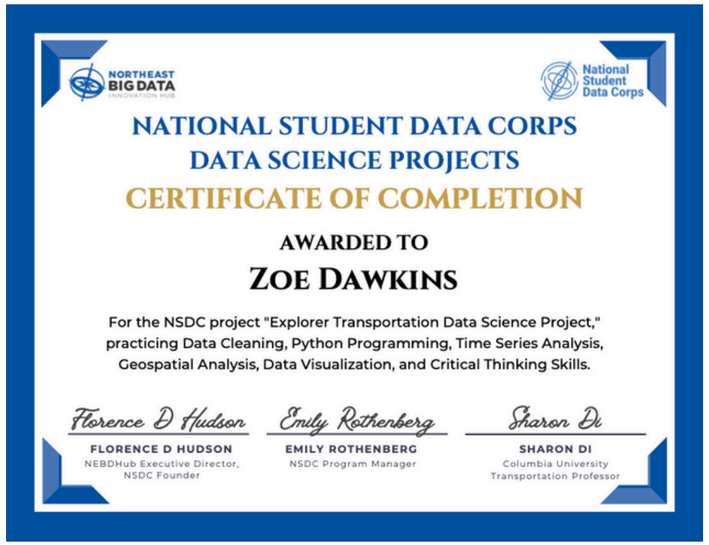
Recommendations for the Department of Transportation and Federal Highway Authority:

1. Reallocate Funding to Vulnerable Road Users:
   - Increase investments in transit and pedestrian infrastructure to support safe, sustainable alternatives to driving.
   - Implement protected bike lanes, enhanced crosswalks, and improved transit access in urban areas.
2. Focus on Underfunded Modes:
   - Allocate more funding to railroads and water transport to diversify transportation options and reduce dependence on highways.
3. Implement Safety Programs:
   - Use highway funds to create safer environments for vulnerable road users, particularly in urban areas with high pedestrian and cyclist activity.
4. Monitor and Report Performance Metrics:
   - Establish systems to track the impact of funding on infrastructure quality, safety outcomes, and usage patterns.

Citations:

1. Bureau of Transportation Statistics. (n.d.). Transportation Public Finance Publications. U.S. Department of Transportation. Retrieved from
2. George Mason University Writing Center. (2020). How to Write a Research Question. Retrieved from

Acknowledgments:



Python Notebook and Dashboard Link

Overview:

- I conducted a comprehensive analysis of U.S. transportation funding trends across different modes (highways, transit, rail, air, waterways, and pipelines)
- I worked with inflation-adjusted public finance data from 2010-2022 to track how government priorities have evolved over time
- I created an interactive dashboard visualizing funding patterns and developed predictive models to forecast future investment trends
- This project was hosted by the Northeast Big Data Innovation Hub & National Student Data Corps in collaboration with the U.S. Department of Transportation

Problem to Solve:

- To determine which transportation modes receive the highest funding and how these priorities have changed over time
- To provide data-driven recommendations to guide future transportation funding decisions

Outcome:

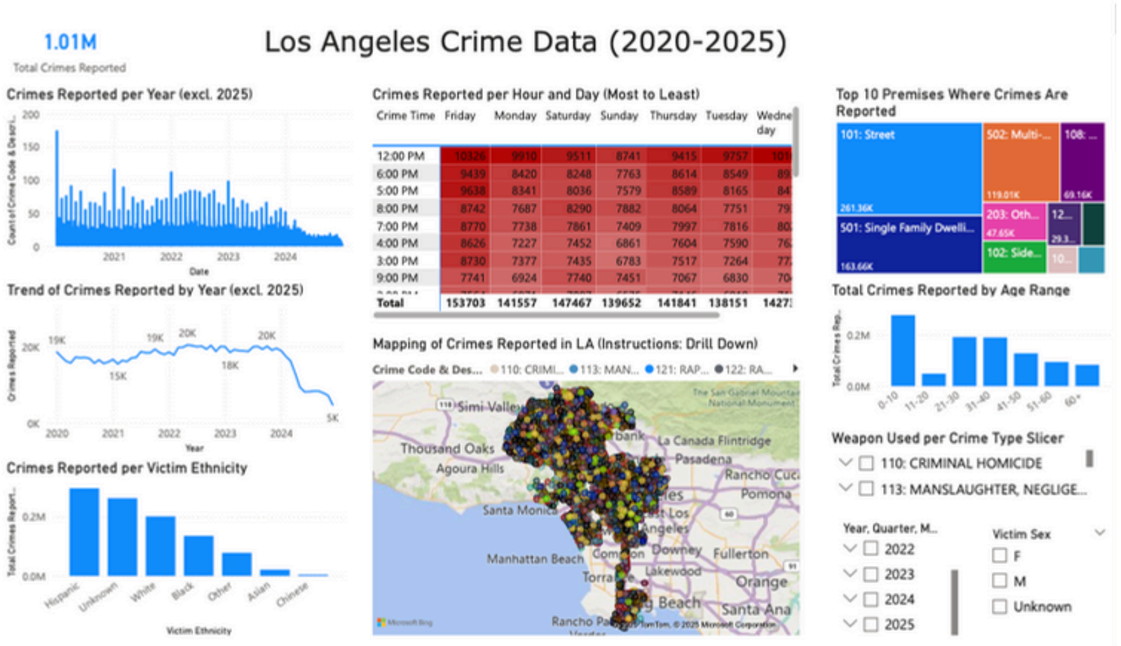
- I discovered that highways consistently receive the highest funding (nearly 50% of total transportation funding), reflecting a long-term focus on road infrastructure
- A comprehensive dashboard and predictive model showing continued growth in transit funding through 2030, though still significantly lower than highway investment
- Recommendations for reallocating funding to better support sustainable transportation alternatives

Skills Used:

1. Data analysis and cleaning using Python (Pandas)
2. Statistical analysis of time-series data
3. Data visualization with multiple libraries (Matplotlib, Seaborn, Plotly)
4. Predictive modeling using linear regression
5. Dashboard creation for effective data storytelling
6. Critical analysis of government spending patterns
7. Interpretation of economic and policy implications of funding decisions
8. Developing evidence-based recommendations for policy consideration

Link: https://drive.google.com/file/d/1WQRaC8PkqmtzXEEP7dNkILHvEcFV6t1o/view?usp=drive_link

Power BI Data Visualization



Analyzing Crimes in Los Angeles from 2020-2025

Overview:

- This is the capstone project from the Dataworks Winter 2025 cohort facilitated by the Metropolitan Data Science Association at my university
- This follows 4 weeks of in-depth training sessions in both Tableau and Power BI
- This data was sourced from US.gov and the Los Angeles Police Department

Problem to Solve:

- While Los Angeles is one of the most desirable places to live for many, it is also notoriously one of the most dangerous. As such, tracking and understanding trends is crucial for improving urban planning and public safety.

Outcome:

- An interactive dashboard that can be drilled down and filtered to get key insights of historical trends to inform policy and planning

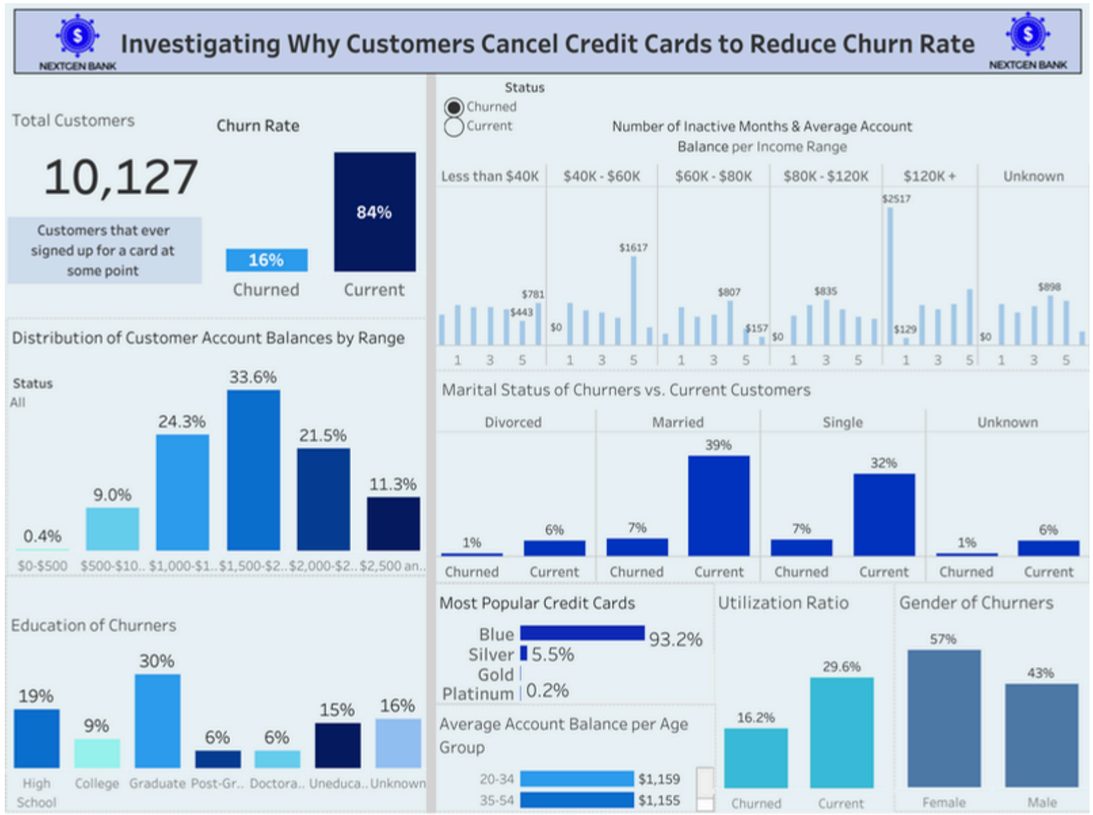
Skills Used:

1. DAX and Measures in Power BI
2. Data Importation, Transformation, and Cleaning
3. Data Visualization
4. Storytelling with Data
5. Dashboard Design

Link: https://drive.google.com/file/d/1Dna7q_KsH6XVNKwsn6CuFUHQ67apaJf0/view?usp=drive_link

Data Source: https://catalog.data.gov/dataset/crime-data-from-2020-to-present

Data Visualization using Tableau



My First Tableau Dashboard - Version 1 - Credit Card Churn

Overview:

- Tableau is an industry-leading visual analytics platform that helps us analyze complex data to solve problems
- Most objectives were given to me as tasks for a challenge and after becoming more familiar with both Tableau and the dataset, I will be uploading improvements with better storytelling to revamp insights and design for clarity
- This dataset is from Kaggle and contains input from 10,000 customers

Problem to Solve:

- Churn is the percentage of customers who stopped using a product or service.
- It is very important because it is usually more expensive to acquire new ones than to keep existing ones, especially in our highly competitive industry.
- Studies show that for financial services a 5% increase in customer retention produces more than a 25% increase in profit.

Outcome:

- An interactive dashboard with clear KPIs that can be used by management to gain insights for strategizing how to reduce churn.

Skills Used:

1. Data Importing and Cleaning
2. Data Visualization
3. Dashboard Design

Link: https://public.tableau.com/app/profile/zoe.dawkins/viz/shared/Q93ZJ2GFW

Brookfield CRE Student Competition

LinkedIn Post

(The investment pitch itself is confidential due to containing corporate details)

Overview:

- Team Edmonton competed against 4 other teams across North America in a 9-week program analyzing a real development in Brookfield's portfolio. We visited this location in person and met with senior executives who mentored us throughout the program.
- We also benefited from interactive weekly lectures by a Columbia University professor/active developer to enrich our CRE fundamentals. Our success was greatly supported by our project managers, mentors, and team collaboration.

Problem to Solve:

- Analyzing a live real estate development project and presenting an investment pitch to an investment committee of real Brookfield executives

Outcome:

- Winning 1st place in the Brookfield Properties Development Cup Championship and enhancing our CRE knowledge through interactive lectures

Skills Used:

1. Market Research
2. Pitch Presentation
3. Strategic Thinking
4. Communication w/ Judges & Teammates
5. Financial Modelling
   - Pro-Forma
   - Sensitivity Analysis
   - Capital Stack etc.
6. Time Management

Link: https://www.linkedin.com/posts/zoe-dawkins_im-excited-to-announce-that-team-edmonton-activity-7194032256972185602-S_Vj?utm_source=share&utm_medium=member_desktop

Financial Analysis using Excel

Financial Analysis Excel Project

Overview:

- I was tasked with assuming the role of an analyst and given a workbook featuring 2 separate sheets with a housing amortization calculator and Walmart sales data to analyze

Problem to Solve:

- Amortization Analysis: exploring interest and principal payments over time, considering the effects of various economic factors on loan repayment strategies

- Walmart Analysis: aiming to not only pinpoint the drivers behind sales performance disparities among stores but also to optimize financial planning and debt management strategies within the corporation

Outcome:

- A dynamic calculator showing us key amortization values dependent on our input and a sales dashboard providing sales figures with filters to drill down on large data

Skills Used:

1. Pivot Tables
2. Dashboard Design
3. VLOOKUP/XLOOKUP
4. Financial Functions (EFFECT, IMPT, etc.)
4. Logical & Mathematical Functions
5. Conditional Formatting
6. Table & Chart Manipulation
7. Slicers

Link: https://docs.google.com/spreadsheets/d/1JjtFQeqY5kxJikfNxMZHI1WarXpLjeNe/edit?usp=sharing&ouid=102359505387877315655&rtpof=true&sd=true

DataDash Hackathon/Case Competition

DataDash Hackathon (click to view):

1. **Pitch Presentation**
2. **Product Prototype on Figma**

Overview:

- I had the incredible opportunity to participate in the DataDash Hackathon organized by the Metropolitan Data Science Association (MDSA) with Fidelity Investments as a lead sponsor among other top companies. This 3-day hackathon was a fast-paced experience where teams identified specific sustainability challenges and strategized prototyped solutions.
- Between working on our cases, we attended workshops hosted by industry professionals on Data Analytics and Visualization, Pitching 101, Design Thinking & Rapid Prototyping

Problem to Solve:

- Develop a technical (but non-coding necessary) solution that harnesses the capabilities of data analysis & visualization or artificial intelligence to tackle a specific issue related to sustainable development in Canada

Outcome:

- A product prototype and pitch presentation of our business solution, GreenGather. We placed in the top 4 out of 13 teams.

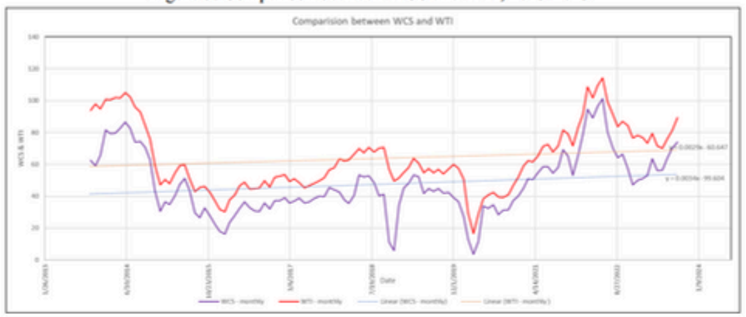
Skills Used:

1. Data Analysis
2. Pitch Presentation using PowerPoint
3. Market Research
4. Product Prototyping using Figma
4. Design Thinking
5. Data Visualization
6. Communication with Judges and Teammates

Link: https://drive.google.com/file/d/1VwrKjfkoXfaCKTSLJgaml7jj5MwUBasJ/view?usp=drive_link

Economic Analysis: Group Case Study

Figure 5: Comparison between WCS and WTI, 2013-2023



Sources: Data retrieved from Alberta Economic Dashboard
Frequency: Monthly

Data Description:

Two datasets were utilized in this study, covering the period from 2013 to 2023. The datasets include the Alberta Economy WCS Oil Price, and the FRED CAD: USD spot exchange rate data (dated 11/1/2013 to 9/1/2023). Prices are given in USD, and the exchange rate is in Canadian Dollars per U.S. Dollar. The frequency of the data is monthly. After gathering all the data, the spread between WCS and WTI was calculated. Subsequently, a correlation was conducted between the spread and the exchange rate.

Data Analysis:

An analysis of the trends in oil prices and the exchange rate over the past decade revealed significant volatility in both of these variables. The correlation analysis shown in "Figure 4: Correlation between WCS/WTI Spread and Exchange Rate, 2013-2023" depicts that oil prices

Group Case Study

Overview:

- This explores how fluctuations in oil prices impact Canada's economy, given its status as a significant oil exporter, and examines the interplay of various factors including technological advancements, geopolitical strife, and changes in global energy policies on this dynamic.

Problem to Solve:

- To understand the extent to which the Canadian dollar's exchange rate against the US dollar is influenced by crude oil price fluctuations.

Outcome:

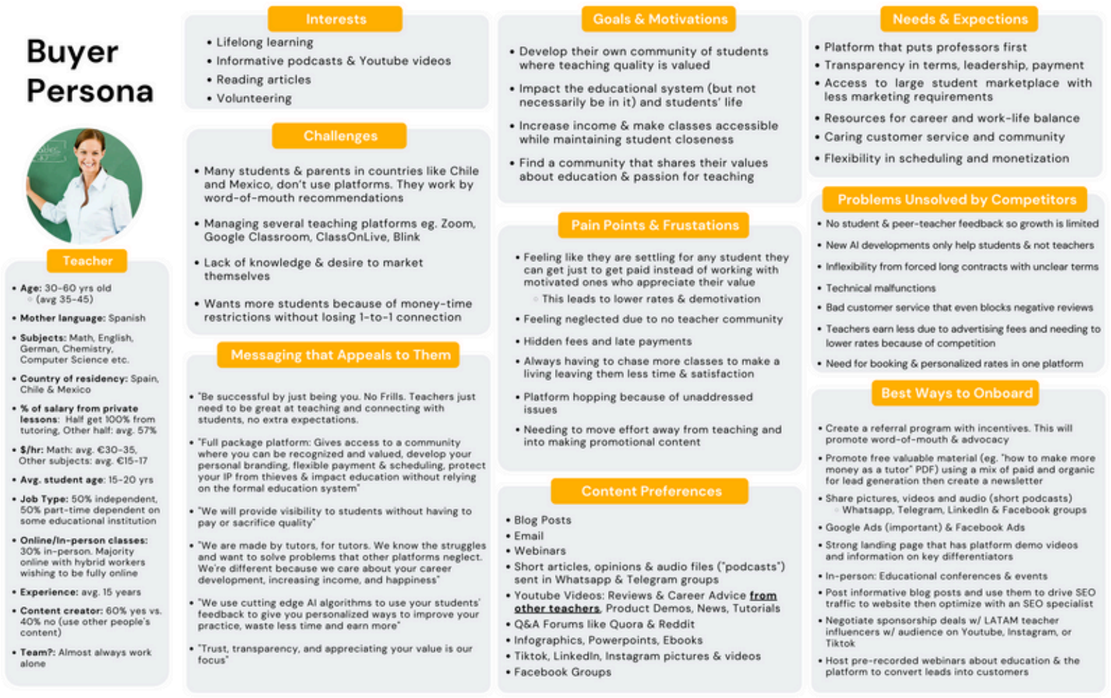
- Achieved a 90% grade (A+)
- The study concludes a negative correlation between oil prices and the USD/CAD exchange rate, indicating that higher oil prices generally strengthen the Canadian dollar.

Skills Used:

1. Statistical Analysis
2. Economic Theory
3. Data Cleaning
4. Primary Data Research & Sourcing
5. Trend Analysis
6. Teamwork
7. Communication

Link: https://drive.google.com/file/d/1WQRaC8PkqmtzXEEP7dNkILHvEcFV6t1o/view?usp=drive_link

User Persona for Startup



EdTech Startup Buyer Persona (Civita Laurea)

Overview:

- In my part-time contract role as a Market Research & Strategy Intern, this buyer persona is one of the documents in the go-to-market strategy made for a Montreal-based, LATAM-focused EdTech startup.

Problem to Solve:

- To identify our target audience's core needs, goals, pain points, and behaviour patterns to tailor our platform for launch success

Outcome:

- This helped the startup to align its product development with expectations, stay focused on resonating with end users and streamline its strategic decisions

Skills Used:

1. User-Centric Thinking
2. Market research
3. Competitor Analysis
4. Visual Design
5. Communication

Link: https://drive.google.com/file/d/1lwVpFBjawz6AwwmXWaixr3Dkia9Oj0hq/view?usp=drive_link

Upcoming Activities

Here are a few things I'll be doing in the upcoming weeks:

1. Completing the Data Analyst Career Certificate from DataCamp

2. Attending professional development and networking events from Rewriting The Code (Toronto Summer Tech Hub member), Obsidi x Black Professionals in Tech Network, Hackathons, etc.

3. Building my GitHub personal portfolio with data science projects

4. Travelling and discovering exciting new audiobooks, events, and people!

Thank You!

Connect with me on LinkedIn or contact me here.