Scott Townsend

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EDUCATION

Brigham Young University-Idaho — Rexburg, ID
Bachelors of Science: Data Science — April 2022 - April 2025
Minor: Statistics

SKILLS

Analysis & Visualization: Power BI, Tableau, Looker Studio, Power BI, and Miscrosft Excel for interactive dashboards and insights communication.

Libraries & Languages - *Python:* Polars, Pandas, NumPy, Seaborn, Matplotlib, Plotly, TensorFlow, Keras, PyTorch, PySpark, Scikit-learn *R:* tidyr, dplyr, ggplotly, lubridate, stringr, shiny, ggplot2. *SQL*

Tools - VS Code, Databricks, Colab, RStudio, Positron, MySQL, Azure, PostgreSQL, Docker, GitHub, and Git for Version Control

Web Development: Familiar with Streamlit, HTML, CSS, JavaScript, and C# for web development.

EXPERIENCE

Marcus Harris Foundation — December 2023-Present
Data Entry Analyst | Python, Excel — Rexburg, ID

- Harvested and **imported large volumes of data from the IRS tax-exempt organization database, using Python (Pandas)** to clean and structure the data before inserting it into Excel for further organization.
- Merged and **manipulated multiple datasets using Pandas**, streamlining data integration and ensuring consistency for analysis and reporting.
- **Generated visualizations and insights by analyzing trends in Python** and summarizing findings in Excel, providing data-driven recommendations to optimize marketing outreach strategies.

Brigham Young University - Idaho — January 2023-Present
Data Analyst | Python, SQL, JavaScript — Rexburg, ID

- Financial Forecasting & Cost Analysis – **Utilized Python (Pandas, NumPy) to analyze financial data** and forecast costs for AI tutor implementation, identifying optimal strategies to reduce expenses by balancing TA and AI model usage.
- User Interface Development – **Worked with JavaScript to enhance the AI model's UI**, improving user interaction and accessibility for a seamless academic support experience.

SELECTED PROJECTS

Convenience Stores Data Engineering — January 2025-Present

- Engineered both Easy and Complex Features in Databricks using **PySpark**, **Plotly**, and **Seaborn** to support an ML model predicting cumulative sales for U.S. Convenience Stores.
- Transformed large-scale transactional and product-level data into meaningful signals to improve model performance and accuracy.
- Conducted exploratory data analysis and visualized key trends to guide feature development and enhance model interpretability.

Image Captioning Tool — December 2024-Present

- Developed a deep learning model to generate descriptive captions for images, aiding visually impaired individuals and automating social media captioning.
- Implemented a **Convolutional Neural Network** (CNN) for image feature extraction (VGG16) and a sequence model (LSTM/Transformer) for caption generation.
- Visualized model attention areas with heatmaps and presented insights through data visualizations.

Student Performance ML Analysis — November 2023-December 2024

- Machine Learning Techniques & Models: Developed and compared **Linear Regression and Random Forest Regressor** models to predict student performance, leveraging cross-validation and GridSearchCV for hyperparameter tuning.
- Data Preprocessing & Feature Engineering: Applied one-hot encoding, standardization (StandardScaler), and created a new average_score feature to **enhance predictive accuracy**.
- Evaluation & Visualization: Assessed model performance using MSE, R-squared, MAE, RMSE, and **presented insights** with scatter plots, histograms, residual analysis, and **feature importance visualizations** using Matplotlib and Seaborn.