Alex Isbill

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Education

Western Washington University 2020 – 2023

B.S. in Data Science; Minors in Mathematics & Economics *GPA: 3.98*

- **Relevant Coursework**: Fundamentals of Data Science, Database Systems, Data Structures & Algorithms, Machine Learning, Deep Learning, Probability & Statistics I & II, Linear Algebra I & II
- **Online Courses & Certificates**: Machine Learning (Stanford), Advanced SQL, Natural Language Processing
- **Western Undergraduate Exchange Award:** $13,800/year awarded to top 10% of out-of-state students

Experience

Hutchinson Machine Learning Research Group 01/2022 - Present

Deep Learning Research Assistant

- Developed and trained convolutional neural network from aerial LiDAR scans to classify archaeological features in the Mayapan region.
- Refined framework to more efficiently process pointcloud data for use in semantic segmentation and object detection models, reducing runtime by 33%.
- Improved visualizations by producing hillshade elevation maps to verify accuracy of input labels.

WWU Center for Economic and Business Research 09/2021 - 12/2021

Data Analyst

- Identified sectors and regions poised for growth by creating a time-series forecast to model construction spending in five major metropolitan areas, leading to a ~7.6% increase in client's annual revenue.
- Co-authored report detailing expansion routes for Schuchart Construction using Pandas to analyze 500k+ rows of data pulled from employment, GDP, population, and migration datasets.
- Produced and presented data visualizations and graphics identifying sectors with growth opportunities using Tableau and Matplotlib.

University of Colorado Institute for Arctic and Alpine Research 06/2019 - 03/2020

Research Assistant

- Awarded 1st place at the Colorado Science Symposium for contributions to the analysis of the impact of the invasive *Rhinocyllus conicus* species on the native Colorado thistle population.
- Modeled the declining native thistle population with R to predict a future local extinction.
- Improved population density estimates of the *Rhinocyllus conicus* species by identifying and correcting an error in sampling method, preserving 20 hours of annual fieldwork.

Projects

COVID-19 Travel Trends Analysis | *Data Analysis & Visualization, Pandas, Seaborn, Mobile Device Data*

- Analyzed 3.6 million rows of mobile device data to evaluate the impact of COVID-19 on average American trip duration and distance.
- Utilized Pandas to segregate data based on home county and state to assess efficacy of local lockdown orders.

Spotify Genre Classification Model | *Python, Pandas, Multi-class Classification, API Integration*

- Developed a Spotify genre classifier by tuning a random-forest classification model to improve song genre prediction accuracy by 12.2%.
- Performed exploratory data analysis using Pandas and Matplotlib to visualize trends and locate audio characteristics that had higher frequencies in certain genres.

Aerial Border Outlier Classification | *Computer Vision, Python, NumPy, Matplotlib, Imageio*

- Achieved 99.8% accuracy in classifying outliers in Bing's Ecuador-Peru border images dataset.
- Established image features for outlier detection using NumPy and Matplotlib.

Technical Skills

Languages: Python, R, SQL, Java, Octave, Racket
Libraries: Pytorch, NumPy, Pandas, Scikit-learn, Matplotlib, Seaborn, BeautifulSoup
Data Science: Regression, Classification, Data Visualization, Web Scraping, Natural Language Processing, Computer Vision, Time-Series Forecasting
Tools: Git, Jupyter, Tableau, Adobe CC, MATLAB, Excel