

Kaci Kus

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Data Scientist

[GitHub](#) | [LinkedIn](#) | [Website](#)

EDUCATION

M.S. Geology (Thesis) – Colorado School of Mines – **4.0/4.0 GPA**

May 2021

Data Science Program (6-month) – Thinkful

December 2020

B.A. Geology & Studio Art – Colby College – **3.87/4.0 GPA**

May 2018

SKILLS

Statistical Analysis: Hypothesis testing, Bayesian statistics, parametric & non-parametric techniques, data distributions

Data Mining/ Processing: Web-scraping, missing data imputation, class-imbalance, transformation

Machine Learning: Feature engineering, dimensionality reduction, supervised and unsupervised learning models, predictive modeling, hyper-parameter tuning, convolutional neural networks (CNN), natural language processing (NLP)

EXPERIENCE

Research Assistant, Colorado School of Mines | Golden, CO

Aug. 2018 – Present

- Designed CNN to classify thin-section mineralogy using fine-grained image segmentation.
- Developed metrics to quantify and analyze trends from physical measurements, photogrammetry, and geochemical data.
- Increased workflow efficiency by writing Python and MATLAB scripts to streamline data analysis and visualization.
- Presented research at national conferences and educated non-technical audiences on business impacts of my insights.

Geoscience Intern, Occidental Petroleum | Houston, TX

May 12 – Aug. 1, 2019

- Recommended solutions to save company US\$1.7 MM per well by analyzing competitor production data.
- Collaborated on multi-disciplinary team of engineers to integrate data from internal and external resources.
- Presented to >30 technical and non-technical stakeholders to communicate business insights in an understandable way.

Teaching Assistant, Colby College | Waterville, ME

Sept. 2016 – May 2018

- Introduced and graded weekly lab assignments to classes of 16-20 undergraduate students.
- Provided support and individual attention to students during their 2 hr lab periods to maintain high performance.
- Kept students motivated with proactive behavior modification and positive reinforcement strategies.

PROJECTS

Instagram Hashtag Recommender System | [GitHub](#): Developed model to recommend optimal hashtags.

Dec. 2020

- Developed and deployed Flask web application using AWS EC2 instance to make publicly accessible ([link](#))*.
- Wrote modular web-scraper to efficiently automate large-scale data collection from Instagram.
- Developed recommender system using image analysis to extract deep features with CNN.
- Optimized recommendations using NLP, Bag of Words, and Skip-gram algorithms, increasing avg. engagement 150%

Predictive Modeling of Stock Prices | [GitHub](#): Developed models to predict if stock price will rise or fall.

Oct. 2020

- Wrote API requests to automate data processing pipelines and collect, organize, and update database.
- Parsed and analyzed sentiment of >35,000 news headlines using Natural Language Toolkit Library to improve modeling.
- Trained, tested, and validated supervised learning models (logistic regression, random forest, gradient boosting, SVM) to assess model performance, increasing accuracy to 73%.

Cluster Analysis | [GitHub](#): Compared unsupervised learning models to analyze movie ratings and genres.

Sept. 2020

- Tuned parameters for machine learning algorithms, such as k-means, DBSCAN, gaussian mixture modeling, and hierarchical clustering to determine optimal customer segmentation groups.
- Optimized dimensionality reduction (PCA, t-SNE, and UMAP) to improve data visualization.
- Analyzed cluster components to better understand intra-cluster relationships and customer segmentation.

Technology used: Python, Git, HTML, Pandas, NumPy, Matplotlib, Scikit-learn, SciPy, Seaborn, NLTK, Tensorflow, MobileNetV2, Flask, AWS, Google G Suite, Microsoft Office, PostgreSQL

ACHIEVEMENTS AND INVOLVEMENT

Hospice Volunteer 1-2 hr/week with Brookdale Green Mountain

2019 – present

Co-authored publication on undergraduate research (Journal of Sedimentary Research)

2020

1st place among 5 participating teams in Imperial Barrel Award Competition

2019

Awarded President's Purchase Prize for oil painting (juried art show)

2018

*Web-app only accessible MON-FRI 8:00AM – 5:00PM MST