

# Peter Jourgensen

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## Education

University of California, Los Angeles, Los Angeles, CA.

expected 12/19

Masters of Science in *Computer Science* with a focus on *Machine Learning*

- GPA: 3.7/4.0

Northwestern University, Evanston, IL.

2015

Bachelors of Science in *Applied Mathematics* | Minor in *Economics* | Certificate in *Financial Economics*

- Major GPA: 3.8/4.0, *Cum Laude*

## Skills

- **Programming:** Python, R, MATLAB, SQL
- **DevOps:** Object-Oriented Programming, Git, Docker, Heroku
- **ML/AI:** Classification, Regression, Cross-validation, SKLearn, Ensembling, CNNs, LSTMs

## Data Science Project Portfolio

Route Scout

2019

An NLP-based web application to help climbers find their perfect route; [App](#); [Blog](#)

- Developed and deployed a novel web app that recommends climbing routes based on user input description; used Dash and Plotly for development and visualization and Heroku for deployment
- Constructed a Postgres database of all Southern California bouldering routes via requests to Mountain Project's API and some additional web scraping
- Created NLP pipeline to standardize all route descriptions before vectorizing with TF-IDF and ranking by largest cosine similarity to input description
- Containerized application with Docker for ease in reproducibility

National Health and Nutritional Examination Survey (NHANES) Analysis

2019

Assessing Patient Cancer Risk for Advance Warning and Preventative Care; [Blog](#)

- Developed object-oriented architecture with python and SKLearn to seamlessly pipeline feature selection and model tuning for ease in building, running, and testing experiments
- Performed missing value imputation, outlier handling, and categorical encodings via proprietary preprocessing functions
- Optimized GBDT model and achieved 90.4% accuracy and 24.2% recall on held out test set

## Research Experience

Heatwave Prediction

2019

Longlead Prediction of Extreme Heat Events for Agricultural Planning; Advisor: Karen McKinnon; [Blog](#)

- Developed object-oriented pipeline to detrend and deseasonalize the data; leveraged numpy and xarray libraries for vectorized computing
- Developed object-oriented pipeline for neural network construction with keras and tensorflow to easily facilitate parameter tuning and results storage
- Employed ftplib, netCDF4, and xarray libraries to facilitate download and memory management of 34 years of Sea Surface Temperature data (720x1440 data grid per day)
- Leveraged Google Cloud Engine for model training

## Professional Experience

Valkyrie Trading LLC, Chicago, IL.

Trader

2017-2018

Junior Trader

2015-2017

- Generated ~1% increase in market share of 10-year note options by analyzing time series data and developing company's first risk model to price calendar spread option strategies
- Reduced option trader distraction by developing tool to model futures spread risk via moving correlations
- Achieved net profits of >\$1,000,000 while leading a team of 3 in the collaborative execution and risk management of fixed income future options