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, Git
- **Statistics:** Experimental Design, A/B Testing, Bayesian Analysis, Data Visualization
- **ML/AI:** Classification, Regression, Cross-validation, Grid-search, SKLearn, Ensembling, CNNs, LSTMs

Research Experience

Heatwave Prediction *2019-present*
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 GPU access via the Google Cloud Engine for model training; final results still TBD

Project Portfolio

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 various processes
- 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

Gene Selection & Acute Leukemia Classification *2019*
Identifying Significant Genes for Acute Leukemia Classification; Blog
- Managed and processed a dataset of 72 patients and 9000+ gene expressions with pandas and numpy
- Applied bootstrapping to an ANN developed with tensorflow in an attempt to identify key gene combinations related to Acute Leukemia
- Developed scoring algorithm to rank each gene based on its predictive capabilities when working in combination with other genes
- Grid searched over the number of top scoring genes to optimize a KNN model for final prediction; identified the top 48 genes as the optimal combination and achieved 97.2% prediction accuracy on held out test set

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