

## EXPERIENCE

### Energy Markets Analytics Associate

July 2018 -- July 2019

*EnergyGPS*

Portland, OR

- Established statistical models based on quantitative analyses of energy market asset valuations for Fortune 500 consulting clients using real-time data through Python, Tableau, SQL Server, and VBA.
- Researched and implemented a hidden markov model trained on high frequency wind data to improve forecasting.
- Developed a customized revenue model for the optimal strategy of a grid scale battery using Python and SQL Server, collaborated with engineering team to assess scalability and productize the model for customers.

### Research Assistant

Nov 2017 -- March 2018

*Earth Economics*

Tacoma, WA

- Provided support to research team through literature review, checking data quality, and finding new data sources.
- Presented a technical proof critiquing the integrity and design of a sensitivity analysis technique using Python.

### Operations Business Analyst

June 2016 -- Dec 2017

*KinderCare*

Portland, OR

- Collaborated with team members on presentations covering technical analytics to drive labor and efficiency solutions.
- Automated procedures and labor projections using VBA algorithms, saving 3 to 4 hours on daily tasks and analysis.
- Translated technical analyses on company data sets into customizable visualization dashboards used nationally.

## PROJECTS

### Portfolio Optimization with Options

March 2021 -- Oct 2021

- Developed an S&P500 options optimization model using volatility prediction and CXVPY with MOSEK in Python.
- Collected, processed, and analyzed options, stock, and treasury bill time series data using Numpy, Pandas and Seaborn.
- Analyzed how pricing and liquidity dynamics in the option markets affected the performance of the optimization model, including with Covid anomalies.

### EU Electricity Market Modeling

Oct 2019 -- July 2020

- Designed algorithms to scrape, parse, and clean 5 years of hourly electricity data from over 20 countries in unstructured XML format from a HTTP based API using the Tidyverse and XML R packages.
- In collaboration with group member, implemented panel regression analysis to determine the quantitative impact of renewable power on the balancing marketplace using the Forecast, Series, and PLM R packages.
- Employed bayesian structural time series and Monte Carlo methods to model the autocorrelated series.

## EDUCATION

### M.Sc Econometrics and Empirical Economics

Sep 2019 -- Oct 2021

*Toulouse School of Economics* (#22 Worldwide)

Toulouse, France

- Awarded Sanofi and Analysis Group full scholarship available to only one American applicant.
- **Coursework:** Machine Learning, Time Series, Markov Chains, Panel Data, Financial Econometrics, High Dimensional Models, Nonparametric Econometrics Methods, Data Analysis.
- **Research:** Covid-19 Time Since Infection Modeling; Eigenvector Decomposition Analysis of Simulated Finance Factor Models; Nonparametric Traffic Time Series Analysis; Time Varying Network Lasso Regression

### B.S. Economics, Mathematics

Sep 2011 -- Sep 2015

*University of Oregon*

Eugene, OR, USA

- **Coursework:** Linear Algebra, Discrete Dynamical Systems, Networks and Combinatorics, Statistics.

## SKILLS

Python (Numpy, Pandas, Scikit-learn, Matplotlib, Seaborn, Plotly), SQL, Tableau, R, Latex, VBA, STATA, French

## PROFESSIONAL DEVELOPMENT

- **Coursera Data Science/Deep Learning Series:** Neural Networks and Deep Learning, Sequence Models