

# YIN ZHANG

Data Scientist, Economist, PhD Student

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## TECHNICAL EXPERIENCE

### Sentiment Analysis on Cryptocurrency Return [by Python]

#### Chapter of Dissertation

Spring 2022

- Scraped large sets of text data from Twitter (10 million+ observations) to investigate the relationship between online investor sentiment and cryptocurrency returns.
- Applied tokenization and normalization by Natural Language Processing (NLP) technique to clean text data.
- Classified sentiment by both unsupervised-learning and supervised-learning approaches, including logistic regression, SVM, and own-developed lexicon-based tool.
- Developed time series models to show the predictive power of sentiment on cryptocurrency returns.

### Pricing European Options Under Heston Model [by R]

#### Project of M.S. Mathematics

Spring 2020

- Estimated parameters by Maximum Likelihood, calculated option price, checked validation and discussed properties of Heston model.
- Increased the forecasting accuracy by 13%, compared with classical Black-Scholes option pricing model.

### Project of PNW Container Optimization Model

#### Research Assistant

Fall 2019

- Collected, cleaned, prepped data using Stata, SQL, and Excel to help Professor build container rental and transportation optimization model.
- Contributed towards the development of optimization model and conducted econometric analysis on operational costs reduction problem.

### Various Statistics/Mathematics/Economics Courses

#### Solo Instructor & Teaching Assistant

January 2016 – Now

- Met with 20-100+ students at least 3 times per week in-person or through online platforms.
- Prepared and designed course materials, held office hours, led review sessions, scheduled weekly 1 on 1 meetings, summarized weekly overall performances for students to help them maintain up-to-date learning plans.
- Assessed students' learning outcomes to identify their weaknesses and needs, helped 300+ students perform 30% better in undergraduate-level courses.

## RELEVANT COURSEWORK

Machine Learning

Econometrics I-IV

Data Science

Time Series

Bayesian Analysis

Multivariate Analysis

Statistical Computing

Simulation Methods

Graduate Statistics

## EXPERTISE

Machine Learning

Predictive Modeling

Natural Language Processing

Data Mining

Causal Inference

Data Visualization

## EDUCATION

Ph.D. Economics

Washington State University

May 2023[Expected]

M.S. Statistics

Washington State University

May 2023[Expected]

M.S. Mathematics

Washington State University

May 2020

M.A. Financial Economics

University of San Francisco

May 2017

B.A. Finance

2nd Major: Management Operation

Washington State University

May 2014

## SKILLS

Toolkits: Python

R

SAS

Stata

SQL

Matlab

Frameworks:

Pandas

NumPy

NLTK

SKLearn

StatsModel

Matplotlib

Git

Languages:

English [fluent]

Chinese [native]

## COURSE PROJECTS

- Credit card fraud detection using the Random Forest and Logistic Regression
- Forecasting JPY/USD and GBP/USD exchange rate by ARIMA model
- Applied Bayesian approach to predict carbonation depth of concrete