

# Richard Feng

SOFTWARE ENGINEER · DATA ANALYST · UNDERGRADUATE RESEARCHER

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## Education

### University of Wisconsin, Madison (2015-2019)

DOUBLE MAJOR: B.S. IN **COMPUTER SCIENCE** AND **STATISTICS**  
MINOR: **MATHEMATICS**

## Key Courses

- Comp Sci 639: Database Management for Data Science
- Statistics 479: Deep Learning
- Comp Sci 540: Artificial Intelligence
- Comp Sci 577: Algorithms
- Comp Sci 564: Database Management Systems

## Skills

- **Experienced:** Python, Java, R
- **Proficient:** SQL, Scala, Julia, JavaScript, C, C++
- **Libraries/Packages** Pandas, PyTorch, Scikit-learn, NumPy, Matplotlib
- **Technology/Frameworks:** Kafka, Kubernetes, Docker, AWS
- Mandarin Chinese - Full working proficiency

## Experience

### UW Database Group

#### DATA SCIENCE RESEARCH ASSISTANT (PROF. THEO REKATSINAS)

- Working on UW-COSMOS, an automated dark data extraction and knowledge base construction system
- Creating deep learning models to extract information from equations and figures in scientific publications (*Python*)

Madison, WI

April 2019 - Present

### Quad/Graphics

#### DATA ANALYST INTERN

- Forecasting seasonal trends of business operations using time series analysis and optimization (*R*)
  - Forecasting various sales revenues with only 1-8% mean absolute percentage error
  - Incorporating vast amounts of macroeconomic data as external regressors through data scraping

Sussex, WI

September 2018 - Present

### Target Corporation

#### SOFTWARE ENGINEERING INTERN (BACK-END)

- Increased reliability of the inventory analysis system by analyzing and processing data pipelines (*Scala*)
  - Utilized Kafka, PostgreSQL, REST APIs, Docker
- Built infrastructure for robust and scalable system to better handle Spark jobs crashing (*Java, Bash*)
  - Utilized Kubernetes, Spring Boot, Jenkins, Grafana, Slack API

Minneapolis, MN

June 2018 - August 2018

### UW Scalable Systems Lab

#### COMPUTATIONAL RESEARCH ASSISTANT (PROF. VICTOR ZAVALA)

- Developed data visualizations for Plasmol.jl, a platform for scalable modeling and optimization
- Constructed large hypergraphs efficiently in a psuedo-bipartite format and an 0/1 matrix format (*Julia*)

Madison, WI

January 2018 - December 2018

### Avid Ratings

#### SOFTWARE DEVELOPMENT INTERN (FULL-STACK)

- Designed and developed GoSurvey page for users to upload confidential forms, handling auth tokens to restrict access (*Angular*)
- Processed client voicemails into text and created automated responses (*Python*)

Madison, WI

May 2017 - August 2017

## Data Science Personal Projects

### EPS Data Pipeline (Python: Pandas, Scikit-learn)

- Automated recommendation system for forecasting price movement following EPS releases
- Data scrapes for stock information, then preprocesses and cleans gathered data for analysis
- Model evaluation among different machine learning models

### Consumer Spending Analysis (Python: Pytorch, Pandas, Scikit-learn)

- Implemented deep learning model architectures (Softmax Regression & Multilayer Perceptron) to predict consumer spending patterns
- Model tuning and evaluation to increase accuracy from 59% to 81% along with a better confusion matrix

### Feature Selection Analysis (R)

- Reconstructed a European map using no geographical data with only 7 dimensions
- Multivariate analysis to reduce a dataset from 20 dimensions to 7, providing succinct data visualizations along the way
  - Techniques used: Principal Component Analysis, K-means and Hierarchical Clustering, Multidimensional Scaling

## Personal Projects

### Stock Rank/Forecaster (R, Python, AWS)

- Preprocessed and cleaned stock data, quickly extracting key information from large bodies of HTML
- Allows user to search a stock and displays stock information and rankings from various credible sources
- Interactive graphs and charts using statistical models to forecast future stock trends

### AutoCheckout (Javascript, Python, SQL, AWS, S3, Firebase)

- Chrome extension that authenticates users using Firebase, then auto-clicks & auto-fills to quickly purchase item
- Host/update weekly items data on AWS, pulling information from Amazon RDS for PostgreSQL

To see and interact with all projects: [rzfeng.github.io](https://github.com/rzfeng)

## Leadership Experience

**Chess Club UW (Founder/President)** Recruited over 100+ new active members since establishment

**Statistics Club (Vice President)** Organize tournaments to analyze Kaggle datasets (UW Data Challenge)

**Kappa Eta Kappa (Head Publicity Chair)** Organize publicity and outreach events to recruit new members