# Justin Feng

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## SUMMARY

Seeking for a full-time software engineer position.
Data scientist with strong programming and analytical skills. Has a wide range of experience, including front-end web development, machine learning and data analytics. Seeking to leveraging skills to build scalable and efficient applications.

## EDUCATION

**University of Southern California, Marshall School of Business** – Los Angeles, CA **2020**
*Master of Science in Business Analytics (STEM), Dept. of Data Sciences and Operations*
**National Chiao Tung University** – Hsinchu, Taiwan **2018**
*Bachelor of Science in Electrical and Computer Engineering (ECE)*

## WEB-BASED PROJECT

**To-do List** DEMO GitHub **ReactJs / HTML / CSS / JavaScript**
**Simple Calculator** DEMO GitHub **ReactJs / HTML / CSS / JavaScript**

## WORK EXPERIENCE

**PennyMac Loan Services, LLC,** – Westlake Village, CA **2021 –2022**
*Data Scientist* **Python / MSSQL / Snowflake / AWS / Machine Learning**

- Built large-scale machine learning algorithms and developed model pipelines to identify high value customers for potential business, improved marketing effectiveness by 80% and increased marketing efficiency
- Expanded refinance capabilities by building ML models, exploring advanced modeling methodologies (LightGBM, imbalanced classification), and utilizing AWS cloud-based applications (SageMaker, EC2, S3)
- Translated business needs from stakeholders into data science problem and developed technical solutions; collaborated with engineers, managers, and product management with continuous feedback loops

## RESEARCH EXPERIENCE

**Institute of Information Science, Academia Sinica,** – Taipei, Taiwan **2017 - 2018**
*Research Assistant* **Unity Engine (VR environment) / C# / Python / Social Network Analysis**
Sequential Group Recommendation System with Social Network Analysis

- Innovated and implemented the framework of virtual reality recommender system based on social influences, built the prototype with Unity Engine in VR environment. **Paper accepted by and demo in WWW The Web Conference**
- Built linear threshold model simulating the real-world social network and a greedy sequence selection algorithm to tackle the MPA-like (Maximum Probability Assignment) NP-hard problem for maximizing customer satisfaction
- Designed and conducted experiments with Python on user check-in dataset, Gowalla with 6.4M+ entries, to evaluate the effectiveness of recommender algorithm which outperformed the simple greedy algorithm by 50% on accuracy and reduced executing time by 90% comparing with the brute force optimal solution

## PROJECT EXPERIENCE

**Time-Series Analysis Project, S&P 500 Index Volatility Prediction** – Los Angeles, CA **2020**

- Prepared descriptive data analysis on weekly volatility of the S&P 500 index; computed statistics of the time-series data and created data visuals indicating the characteristics of the time-series data over the past 25 years
- Predicted the volatility using techniques including Exponential Smoothing, ARIMA, and ADL model in R language; successfully captured the large fluctuation in 2008 and 2020 and estimated the volatility to a limited accuracy
- Achieved error about 8% off the data and improved 5% of the error after adding VIX index as an external factor

**Algorithmic Trading Project, SSE50 Stocks Investment w/ Statistical Learning Models**– Los Angeles, CA **2020**

- Engineered features from raw data; built a portfolio consists of 9 stocks using open-source Python package *PyPortfolioOpt* and set up naïve buy-in, sell-out trading strategy based on the training period of the data
- Implemented statistical learning models (Boosted Tree, Random Forest, LSTM) to predict future stock return and performed algorithmic trading based on the proposed trading strategy
- Achieved a performance of 42% rate of return, which is about 40% more than a buy-and-hold trading strategy

## SKILLS

*Programming Language:* Python, Java, JavaScript, C++, SQL, NoSQL, R
*Framework & Skills:* ReactJs, HTML, CSS, Front-End Development, Machine Learning, Data Visualization, Relational Databases (MSSQL, Snowflake), Git, AWS (EC2, SageMaker, S3)