Zhitong (Klara) **Guan**

Accessible Tech Researcher · Product Manager · Data Expert

Guangzhou, China

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Education

University of California, Berkeley

Berkeley, CA

MEng in Industrial Engineering & Operations Research — *Aug. 2020 - May 2021*

- Recipient of the Fung Excellence Scholarship ($20,000) 2020
- Core Courses: Advanced Optimization, Advanced Algorithms, Risk Modeling Simulation, Product Management
- GPA: 4.0/4.0 | Major GPA: 4.0/4.0

University of California, Berkeley

Berkeley, CA

BA Double Major in Applied Mathematics & Data Science — *Aug. 2016 - May 2020*

- Core Courses: Convex Optimization, Statistical Theory, Stochastic Processes, Real Analysis, Complex Analysis, Data Science, Data Strictures
- GPA: 3.76/4.0 | Major GPA: 3.9/4.0

Professional Appointments

WeChat Group, Tencent

Guangzhou, China

Product Manager — *Jul. 2021 - PRESENT*

- Currently in charge of the development of WeChat Search, proposing key product concepts and search-rank strategies.
- Managed and supervised 6 different full-stack product development pipeline: discovering user needs, market research, product design, R&D, online experiment, revision and launch.
- Analyzed users' demands, proposed and designed the product's functionalities based on the demands, and prototyped the product with the front-end, back-end and algorithm team.
- Coordinated the progress of product design to guarantee a timely launch of the product.
- Proposed and tracked the improvement plans of the product after launch based on Bug reports, users feedback
- Analyzed product data with statistical tools in Python and SQL and proposed plans to better meet users' expectations.
- Continually tracking user feedback to optimize the product.

Microsoft

Shanghai, China

Data Scientist Intern — *Jun. 2020 - Aug. 2020*

- Implemented multiple data analysis lifecycles: data selection and cleaning, EDA, feature engineering and selection (PCA), model selection and cross-validation.
- Implemented and improved proposed models from academic papers for specific applications.
- Solved automotive failure self-identification problem for the client by designing ML tools based on XGBoost and TextCNN that predict automotive failure from user complaints; achieved 90% accuracy, 95% precision, and 92% recall.

Global AI

New York City, NY

Trading Data Scientist Intern — *May 2020 - Jun. 2020*

- Forecasted large-scale time-series data with ARIMA and deep learning models (LSTM, Transformer), attained a validation accuracy 35% higher than the company's baseline mode, and visualized trends, patterns and forecasts.
- Created a trading algorithm based on sentiment analysis with an ensemble of models including SVM, Random Forest, and Logistic Regression and achieved a backtest result of 1.16 financial returns.
- Implemented and optimized data collection methods with API including BeutifulSoup, web scraped over 3GB of news data for sentiment analysis.
- Desined data imputations for time series data with linear and spline interpolations, complete the sparse data matrix 40% more and enabled future forecasting.

Delta Dental Co., Ltd

Oakland, CA

Actuarial Data Analyst Intern

Jun. 2019 - Aug. 2019

- Gained cost insights concerning factors such as age and group size by conducting data mining and analysis using Python, SQL, and Excel with visualization tools (Seaborn, Matplotlib), and heled update pricing rule, decreasing total loss by 2.5%.
- Devised intelligent slide deck in collaboration with the sales team using VBA and SQL extension, which automatically extracted data, created charts and compiled standardized PowerPoints slides, reduced the total working time from a month to 3 days.
- Produced 25+ VBA automated models for actuarial reserving, daily data cleaning and extractions, reducing repetition.
- Tracked out-of-county cases, found the root cause, conducted data analysis, and proposed viable solutions.

Academic Appointments

Accessible Technology for Blind and Low-Vision Population

HKUST - Guangzhou, China

Researcher, the APEX Group, HKUST

Apr. 2022 - Present

- Researcher and project leader in the APEX Group of HKUST, advised by Prof. Mingming Fan.
- Research on accessible technology for blind and low-vision people to independently fetch packages from parcel locker.
- Developed a mobile application system, FetchAid, that utilizes deep learning and augmented reality to guide BLV users to use parcel lockers using voice feedback.
- Conducted user study and data analysis to demonstrate the capability of FetchAid in real-world scenarios.
- First-author paper submitted to *ACM CHI Conference on Human Factors in Computing Systems (CHI) 2023*.

Robust Feature Learning with Data Augmentation

Berkeley, CA

Project Leader

Oct. 2020 - Jan. 2021

- Used self-supervised learning to pre-train ResNet encoder with InfoNCE contrastive loss for more robust features.
- Devised novel domain randomization and data augmentation techniques for ImageNet classification task based on generative models, using GANs to generate perturbed images.
- Made results more interpretable and explainable by using Class Activation Maps to visualize where the network attends to.
- Ablated the results with and without contrastive pre-training and generative augmentation.
- Achieved 7.5% more test accuracy than without pretraining and generic (hardcoded) augmentation.

Banking Customer Churn Prediction and Analysis

Berkeley, CA

Project Leader

Apr. 2020 - May 2020

- Developed algorithms for telecommunications service vendors to predict customer churn probability based on labeled data via Python programming.
- Pre-processed data set by data cleaning, categorical feature transformation and standardization.
- Trained supervised machine learning models including Logistic Regression, Random Forest and K-Nearest Neighbors, and applied regularization with optimal parameters to overcome overfitting.
- Evaluated model performance of classification via k-fold cross-validation technique and analyzed feature importance to identify top factors that influenced the results.

Supply Chain Planning for Sweety Inc.

Berkeley, CA

Team Leader

Feb. 2020 - Jun. 2020

- Solved raw sugar production, refining, transportation and sales problems, used linear programming to optimize the business plan in AMPL, and brought up the profit by 40%.
- Wrote and presented a detailed report including an executive summary that explained the results in a simple way and a plan for production that satisfies all the current constraints.
- Included 5 recommendations and corresponding argumentation on how to improve the production process.
- Project ranked the 1st in class.

Relevant Skills

Programming	Python, SQL, JAVA, LaTeX, Excel, VBA, Web Scraping
Machine Learning	SVM, Linear Regression, Logistic Regression, LDA, QDA, PCA, K-means, Decision Trees/Random Forests, AdaBoost, Deep Learning
Software Libraries	Sklearn, Pandas, Numpy, Matplotlib, Seaborn, Tableau, TensorFlow, Pytorch
Data Analytics	Exploratory Data Analysis, Time Analysis, Hypothesis Testing, A/B Testing
Languages	English (fluent), Mandarin Chinese (fluent), French (Intermediate)
Others	Product Management, Product Design, User Interview, Public Speaking, Business Analysis, Presentation, Event Organization