

Zhitong (Klara) Guan

ACCESSIBLE TECH RESEARCHER · PRODUCT MANAGER · DATA EXPERT

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Education

University of California, Berkeley

Berkeley, CA

MEMBER 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

- Distinction in General Scholarship
- Core Courses: Convex Optimization, Statistical Theory, Stochastic Processes, Real Analysis, Complex Analysis, Data Science, Data Structures
- GPA: 3.76/4.0 | Major GPA: 3.94/4.0

Work Experience

Accessible & Pervasive User Experience (APEX) Group, HKUST(GZ)

Guangzhou, China

RESEARCH ASSOCIATE

Apr. 2022 - Present

- Developed a mobile application system, FetchAid, that utilizes deep learning and augmented reality to guide BLV users in parcel locker touchscreen interaction and precise target localization
- Conducted an in-depth survey on user experience to study the function and adaptability of FetchAid in real-world scenarios.
- Completed a first-author paper based on the results and submitted it to *The Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) 2022 November 2022*.
- Currently studying digital technologies for meditation and mental health.
- Techniques involved: accessible technology, deep learning (computer vision), augmented reality, etc.

WeChat Group, Tencent

Guangzhou, China

PRODUCT MANAGER

Jul. 2021 - Sep. 2022

- Managed 6 full-stack product development pipelines, viz. discovering user needs, market investigation, product design (e.g., tag-helper, toolbar and Channels), R&D, online experiment, revision and launch.
- Proposed corresponding design considerations, functionalities and search-rank strategies to meet users' demands and cooperated with the front-end, back-end and algorithm teams for the product prototypes.
- Coordinated with various departments to guarantee a timely launch of the product.
- Analyzed product data, user logs and feedback after the launch of new products, and supervised follow-up improvement plans.
- Solved emergencies concerned with functionality, data privacy, and security.

Microsoft

Shanghai, China

DATA SCIENTIST INTERN

Jun. 2020 - Aug. 2020

- Implemented multiple data analysis lifecycles for clients: data selection and cleaning, EDA, feature engineering and selection (PCA), model selection and cross-validation.
- Improved proposed models from previous studies for specific applications.
- Created a prediction model for automotive failure from user complaints and achieved 90% accuracy, 95% precision, and 92% recall.
- Solved the problem of automotive self-identification failure by designing NLP tools based on XGBoost and TextCNN.

Global AI

New York City, NY

TRADING DATA SCIENTIST INTERN

May 2020 - Jun. 2020

- 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.
- Optimized data collection methods with API (e.g., BeautifulSoup), and web scraped over 3GB of data for further analysis.
- Designed data imputations for time-series data with linear and spline interpolations, completed the sparse data matrix by 40% more and enabled future forecasting.
- Predicted large-scale time-series data with ARIMA, LSTM, and Transformer, and attained a validation accuracy 35% higher than the company's baseline mode.
- Techniques involved: web-scraping, time-series analysis, feature engineering, etc.

Delta Dental Co., Ltd

Oakland, CA

ACTUARIAL DATA ANALYST INTERN

Jun. 2019 - Aug. 2019

- Analyzed cost factors (e.g., age and group size) by conducting data mining with Python, SQL, and Excel and visualization tools (Seaborn, Matplotlib).
- Assisted in the pricing process and decreased total loss by 2.5%.
- Developed for the sales team an intelligent slide deck to automatically extract data, create charts and compile standardized Power-Point slides using VBA and SQL extensions, and the total working time was reduced from a month to 3 days.
- Produced more than 25 VBA automated models for actuarial reserving, daily data cleaning and extractions to enhance efficiency.
- Techniques involved: data mining, automation, visualization, cost and pricing analysis, etc.

Academic Projects

Design Specialized Machine Learning Tools for Customer Reviews and Operational Decision Making (Capstone Project)

Berkeley, CA

TEAM LEADER

Nov. 2020 - May. 2021

- Processed large dataset of Alibaba's logistics data and conducted data exploration in detail via Spark SQL.
- Conducted feature engineering and identify what impacts customer satisfaction in logistic operations for the online shopping industry to streamline decision making.
- Implemented and trained an innovative deep learning model with stochastic gradient descent technique to predict customer satisfaction.

Robust Feature Learning with Data Augmentation

Berkeley, CA

PROJECT LEADER

Oct. 2020 - Jan. 2021

- Pre-trained ResNet encoder with InfoNCE contrastive loss under self-supervised learning for more robust features.
- Devised novel domain randomization for ImageNet classification tasks based on generative models, using GANs to generate perturbed images.
- Achieved more interpretable and explainable results by Class Activation Maps to visualize where the network attends.

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, a plan for production that satisfies all the current constraints, and recommend 5 argumentations to optimize the production process.
- Project ranked the 1st in class.

Banking Customer Churn Prediction and Analysis

Berkeley, CA

PROJECT LEADER

Apr. 2020 - May 2020

- Created a prediction model for telecommunications service vendors to calculate the probability of customer churn based on labeled data via Python.
- Pre-processed dataset by data cleaning, categorical feature transformation and standardization.
- Trained supervised machine learning models including Logistic Regression, Random Forest and K-Nearest Neighbors, and corrected overfitting by regularization with optimal parameters.
- Evaluated model performance of classification via k-fold cross-validation technique and analyzed feature importance to identify top influencing factors.

Publications

- *In Submission to Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*
2022 November 2022

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 Neural Network

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, Presentation, Event Organization