

Jessica Song

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EDUCATION

B.S. in Data Science, University of California San Diego (Major GPA: 3.98/4.00)
Minor in Mathematics

Aug. 2021 - Mar. 2025

Cornell University, certificate in Machine Learning Foundations

Aug. 2023

EXPERIENCE

Machine Learning Researcher, Qualcomm Institute (health)

Mar. 2024 - present

- Developed interpretable Extra Trees model and ensemble classifier, achieving 10-fold validated 85% and 92% accuracies respectively on imbalanced dataset for MEG spike detection, paper manuscript in preparation

Data Scientist Intern, Wells Fargo Bank N.A. (finance)

June 2024 – Aug. 2024

- Spearheaded 0 to 1** development of scalable automation solution for quality assurance manual process, reducing 53% workload per resource through data mining, training Name Entity Recognition model and XGBoost Classifier
- Presented high-level data analysis insights to non-technical audience effectively, endorsed by department lead

Data Science Intern, Franklin Templeton Investments (finance)

July 2023 – Aug. 2023

- Implemented 5 ad-hoc data dashboards to generate insights about web3 market that directly informed investment decisions using Python, matplotlib and seaborn
 - Built ETL data pipeline for multiple data sources through writing complex SQL queries via Snowflake
- Authored Market Insight findings in Q2 Fund Report and presented data-driven findings to stakeholders
- Developed a binary short-text classifier with 0.88 AUC and 80% accuracy using Word2Vec and LightGBM to monitor startup community Twitter communication; reducing daily Tweet reading workload by 32%

Marketing Analyst Intern (A Round Entertainment, 2023): Built clustering model to forecast artist revenue for budgeting

Data Analytics Intern (HaulPay, 2023): Deployed in-depth customer cohort analysis through data mining and visualizations

RESEARCH

CV: Layout-Grounded Stable Diffusion Optimization | *Python, PyTorch, Javascript, Flask, PHP*

- Led team of 4 to conduct **computer vision** research and integrate two diffusion model architecture to create a new method that enables pixel-level control for text-prompted image generation
- Architected full-stack end-to-end canvas UI that transforms user sketches into detailed images
- Recipient of the UCSD Data Science Undergraduate Scholarship

NLP: LLM Prompt Recovery | *PyTorch, Javascript, Flask, PHP*

- Led team of 4 to implement 4 transfer and reinforcement learning models to recover prompt from LLM response
- Implemented custom neural network with GPT-2 encoder and BERT decoder, creating fully-functional LLM with logically coherent prompt outputs that reach 0.68 cosine similarity with original prompt for Kaggle competition

Recommender System on Yelp Restaurant Data | Python

- Led a team of 4 to implement a recommender system with latent factor collaborative filtering, achieving similar results with Yelp's search engine on 2 test cases for cheap burgers in Willow Grove, PA and Cinnaminson, NJ
- Preprocessed 14 features from two complex datasets using Python, created EDA visualizations, and compiled report
- Optimized model runtime by 95% by implementing gradient descent on matrix factorization using sparse matrices

LEADERSHIP

Product Manager, TripleC, Student Incubator Club

June 2022 - Dec 2022

- Spearheaded 9-member cross-functional team to develop geosocial networking app through executing weekly agile sprints, designing market research, and analyzing user pain points

SKILLS

Python, SQL, Java, R, JavaScript, Unix/Linux, AWS (SageMaker, EC2, Lambda, S3), PySpark, Git, Excel, OOP