

SYLVIA DENG

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Education

University of California, Los Angeles

BS in Math of Computation & Statistics and Data Science

Sep 2021 – Jun 2025(exp.)

GPA: 3.92/4.00

Working Experience

Lab for the Understanding of Network Effects

Undergraduate Researcher

Oct 2023 – Now

Los Angeles, CA

- Explored the integration of tissue-specific data into PathFX (a novel Protein-Protein Interaction model for drug effects prediction) to enhance the understanding of pathology and the development of personalized treatments.
- Implemented comprehensive data analysis pipelines using Python to systematically analyze the intersection of PPI model predictions with gene expression data from GTEx.
- Designed and executed extensive data mining operations over DrugBank using Python and shell scripting, leveraging the Hoffman2 cluster for higher efficiency, to map disease phenotypes to corresponding CUIs, enhancing the lab's disease-pathway dataset.

iSoftStone

Software Engineer Intern

Jul 2023 – Sep 2023

Jiangsu, China

- Managed and maintained an in-house Spring Boot-based backend system for an e-commerce platform, employing Spring Security for authentication and authorization.
- Designed and developed a responsive frontend using React.js and utilized Redux for state management.
- Developed product management modules in Java with Spring Data JPA for data access and manipulation.
- Enhanced platform performance and scalability by integrating Redis caching for optimized data retrieval and storage.

Enhanced Healthcare Partners

Investment Research & Data Analytics Intern

Dec 2021 – Jan 2022

Remote from California

- Conducted comprehensive due diligence research on the plastic surgery and Medspa market using market mapping techniques and integrating data from various sources, including APIs, databases, and web scraping.
- Implemented multilinear regression analysis on the collected data using Python's pandas and scikit-learn libraries and generated insightful visualizations with Tableau to present a comprehensive market overview.

Academic Projects

TasteUCLA | MERN Stack, MongoDB, Express, React.js, Node.js

Oct 2023 – Dec 2023

- Led the development of TasteUCLA, a fullstack campus dining review platform, leveraging the MERN Stack along with MongooseJS, Vite, and TailwindCSS for frontend and backend development.
- Spearheaded the implementation of a real-time search functionality, employing technologies such as WebSocket for seamless querying across restaurants, users, and reviews, enhancing platform usability.
- Engineered an interactive search result dropdown, utilizing React.js and Node.js to update responsively with user input.
- Designed and implemented user-friendly features for improved site navigation and real-time commenting for enhanced community interaction, integrating Redux for state management and Socket.IO for real-time communication.

A Neural Network for Classifying Loan Applications | R, Python

Aug 2023

- Conducted data preprocessing on a large-scale dataset from Wells Fargo National Bank in 2019, consisting of over 470,000 observations. Employed advanced techniques such as bag and median imputation, normalization, and one-hot encoding to ensure data quality and compatibility for subsequent analysis.
- Utilized the keras engine to develop a robust multilayer perceptron (MLP) model. Leveraging 71 predictor variables, the model aimed to accurately predict loan origination or denial outcomes.
- Performed a comparative analysis between the MLP model and alternate candidate models, namely random forest, decision tree, support vector machine (SVM), K-nearest neighbors (KNN), and gradient boosted trees. The analysis was conducted in R for some models, while a neural network model with PyTorch was implemented in Python.
- Achieved a commendable accuracy (F1-Score) of 98.47% on the test dataset, indicating the high performance and robustness of the MLP model in predicting loan outcomes.

Skills

Technical skills: Python, R, C++, Java, SQL, Tableau, JavaScript, HTML, React, CSS, Bash

Development Tools: Git, GitHub, Maven, IntelliJ IDEA, PyCharm, JUnit, unittest, Postman, Jenkins, AWS

Languages: English, Mandarin, Spanish