Oscar Zhang

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Education

University of California, Berkeley — Berkeley, CA
Bachelor of Arts in Computer Science — *Aug. 2025 – Present*

- **Relevant Coursework:** CS50: Introduction to Computer Science (HarvardX), CS61A: Structure and Interpretation of Computer Programs, Data C8: Foundations of Data Science, Linear Algebra and Differential Equations, Calculus I & II

YK Pao School — Shanghai, China
International Baccalaureate Diploma — *Sep. 2021 – Jun. 2025*

Experience

High School Research Assistant — Jan. 2023 – Jan. 2024
Fudan University — *Shanghai, China*

- Curated a novel dataset from the ground up by engineering a data processing pipeline in Python to integrate and analyze the large-scale NHANES public health dataset, encompassing over 200 features across 7,000 samples.
- Executed advanced data wrangling by developing a web scraper with Beautiful Soup to parse documentation and systematically map non-standard values (e.g., "refused", "don't know") to NaN. Applied one-hot encoding to transform categorical features for ML readiness.
- Developed scripts using Pandas to restructure the dataset from a long to a wide format, pivoting the data to consolidate multiple entries per patient into a single, unified feature vector.
- Conducted exploratory data analysis (EDA) that validated the core research hypothesis by visualizing strong correlations between diet, nutrient levels, and disease indicators; applied PCA for dimensionality reduction.

Projects

Multimodal Lung Cancer Diagnosis | *Python, TensorFlow, NumPy, Pandas, Sklearn* — Jun. 2023 – Sep. 2023

- Developed multimodal deep learning model integrating histopathology images, CT scans, and patient data to diagnose lung cancer with 99.19% validation accuracy
- Implemented a feature-fusion strategy using transfer learning on pre-trained InceptionV3 and Xception CNNs to extract and combine features from diverse data sources.
- Constructed a final fully-connected network with Dropout and L2 regularization to improve model generalization and prevent overfitting on the fused feature set.
- Authored 12-page research paper, selected as top 8% and published in Young Scholars Academic Journal.

Web-Based Habit Tracker | *Python, Flask, SQL, HTML, CSS, Bootstrap* — Dec. 2021 – Feb. 2022

- Developed a full-stack web application using Python and Flask to allow users to create, track, and manage personal habits.
- Engineered a persistent user experience by designing a SQLite database to store user accounts, habit details, and progress logs.
- Implemented core application logic for CRUD (Create, Read, Update, Delete) operations, enabling users to add new habits, log progress (success, fail, skip), and archive or delete habits.
- Built a responsive and dynamic front-end with HTML, CSS, and Bootstrap, creating a user-friendly interface for data entry and visualization.

Personal Website | *React, Javascript, TailwindCSS, Vite, HTML* — Oct. 2025

- Developed a personal portfolio website from scratch using React, Vite, and JavaScript to create a dynamic and modern user interface.
- Implemented a fully responsive design with Tailwind CSS, ensuring a seamless viewing experience across desktops, tablets, and mobile devices.

Technical Skills

Languages: Python, SQL, HTML/CSS, JavaScript, C/C++
Frameworks & Libraries: TensorFlow, NumPy, Pandas, Scikit-learn, Matplotlib, TailwindCSS, Flask, Beautiful Soup
Developer Tools: Git, VS Code, Node.js, PyCharm, Jupyter Notebook, Google Colab