

# Jeffrey Yang

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## EDUCATION

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**University of California, San Diego** • Expected Graduation: June 2025 • GPA: 3.843

**B.S. in Cognitive Science w/ Specialization in Machine Learning • Minor in Computer Science**

*Relevant Coursework:* Computer Organization & Systems Programming - A.I Algorithms - Statistical NLP - Algorithms & Systems Analysis - Data Science in Practice

## TECHNICAL SKILLS

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- **Programming languages:** Python, Java, C, C++, HTML, CSS, JavaScript, ARM assembly
- **Web development:** Experience using Flask and PostgreSQL databases to create web applications
- **Machine Learning:** Knowledgeable in ML concepts, including reinforcement learning, neural networks, LLMs, and NLP.
- **Digital Design and Art Skills:** Proficient in Adobe Suite for graphic design and digital illustration

## EXPERIENCE

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**Instructional Apprentice | Introduction to Machine Learning @ UCSD** • September 2024 - Current

- For a class of over 170 students, developed weekly jupyter notebook programming assignments on Datahub to test student machine learning knowledge.
- For each assignment, wrote a comprehensive list of visible and hidden test cases to ensure efficient use of nbgrader to autograde.
- Recorded student participation and helped manually grade and provide personalized feedback on written homework assignments.
- Conducted weekly office hours and assisted in discussion sections to answer student questions on mathematical concepts.

**Design Lead & Tutor | Compass Mentors** • May 2020 - Oct 2021

- Helped create an online tutoring/mentorship program to give middle school students access to high quality education during Covid-19 lockdown.
- As design lead, used InDesign to produce website graphics and promotional flyers to advertise the organization to a wide audience.
- Held one-on-one zoom meetings to train students in graphic design using Adobe Photoshop, assigning weekly homework assignments and creative projects.

## PROJECTS

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**Bloom Journal - AI-powered Digital Journal**

- Developed a full-stack journaling web application using AI-driven tools to foster self-reflection and personal growth
- Architected a PostgreSQL database on AWS to securely store user login credentials and journal entry data.
- Integrated OpenAI's GPT API to provide real-time sentiment analysis on journal entries and weekly summarization of recurring themes and major events.
- Engineered a Flask-based backend to efficiently handle CRUD operations for journal entries, allowing for seamless data retrieval and entry management.
- Designed a user-friendly interface using HTML, CSS, and JavaScript to display journal content and AI-insights/trends.

**Diabetes Data Analysis - Unsupervised Machine Learning Project**

- Conducted an exploratory data analysis research project examining a dataset of 768 diabetes patient records containing 8 key health indicators each (BMI, blood pressure, patient diabetes outcome, etc.).
- Using python, employed various dimensionality reduction methods, including PCA, t-SNE, and UMAP, to visualize cleaned patient data in 2-Dimensional space.
- Applied clustering algorithms, such as K-Means and GMM, to uncover inherent groupings in unlabeled data while tuning hyperparameters for each model to optimize for performance metrics such as silhouette scores.
- Analyzed clusterings and outcome labels, concluding that the dataset naturally groups corresponding to patient diabetes diagnosis.

**Yelp Review Summarizer**

- Built a Flask-based web application to provide users with concise summaries of Yelp businesses with extensive reviews
- Leveraged python libraries such as BeautifulSoup to iteratively extract comprehensive review data such as review text and star rating from Yelp page inputted by users.
- Utilized OpenAI's GPT API to generate insightful summaries of collected data, highlighting general sentiment and key points from positive and negative reviews.

**Triton2Go - UX/UI Redesign Project**

- Collaborated with a multidisciplinary team on a theoretical UX/UI redesign project for Triton2Go, a mobile ordering app for UCSD dining halls.
- Conducted comprehensive user research through 15 student interviews involving observations of user behavior during pre designed tasks.
- Analyzed data to identify common navigation errors (pressing incorrect buttons, scrolling past menu items, etc.) to identify weak aspects of app layout and feature list.
- Proposed a data-driven and user-centered interface redesign using Figma to streamline navigation and improve user experience.

**AWARDS & INTERESTS**

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**Provost Honors | UC San Diego • 2024**

**Life Scout | Boy Scouts of America • 2020**

**Interests:** Boxing, Muay Thai, Digital art & design, Powerlifting