

Yanchen (Joe) Liu

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Objective

Seeking AI Engineering, Software Engineering, or Backend Engineering internship roles for 2026–2028.

Summary

UC San Diego Mathematics and Economics student with minors in Data Science and Finance (GPA: 4.0), focused on AI engineering and AI software engineering with experience building LLM applications, backend systems, and data pipelines.

Education

University of California San Diego (UCSD)

Expected June 2028

B.S. Joint Major in Mathematics & Economics | Minor: Data Science & Finance

- **GPA:** 4.0/4.0; Provost Honors
- **Relevant Coursework:** Data Structures and Algorithms, Data Science, Machine Learning, Linear Algebra, Probability.

Technical Skills

Programming: Python, Java, Bash, SQL

AI/ML: LLMs, Transformers, RAG, Machine Learning, Model Evaluation

Data: PostgreSQL, Supabase

Cloud/DevOps: Docker, Kubernetes, AWS, GCP, Azure, Git, GitHub

Frameworks: LangChain, LangGraph, Langfuse, LangSmith, Hugging Face, FastAPI, REST APIs

AI and Software Projects

Customer Support Agentic System

07/2026 - Present

AI Engineer - LangChain, LangGraph, FastAPI, PostgreSQL, Docker, AWS

- Designed a **stateful customer-support agent** using **LangChain**, **LangGraph** and **FastAPI**, orchestrating **LLM reasoning**, **RAG-based** knowledge retrieval, and **tool calling** across CRM, order, and payment APIs.
- Built a conditional agent workflow for intent classification, order lookup, policy verification, refund processing, and response generation with **deterministic business rules** for high-impact actions. Also implemented **human-in-the-loop approval**, **persistent state**, and **post-action verification** for safe execution and recovery.
- Containerized and deployed the system as a scalable **REST API** using **Docker** and **FastAPI** on **AWS** with **logging**, **health checks**, **error handling**, and **PostgreSQL-backed state persistence** for production reliability.

WhatsNews — AI-Powered News Intelligence Platform

03/2026 - Present

AI Software Engineer - LLM Applications, Backend Systems, Data Pipelines

- Designed and built an **end-to-end AI news platform** with **React Native**, **FastAPI**, **PostgreSQL/Supabase**, and the **OpenAI API**, automating multi-source **RSS ingestion**, **LLM-powered** processing and topic-specific report generation.
- Developed an **RSS ingestion and data-processing pipeline** to collect multi-source news, clean article metadata, persist structured records, and synthesize relevant content into intelligence reports; created **FastAPI REST APIs** for topic management, report retrieval, generation triggers, and connection between the mobile client, database, and AI workflows.
- Automated **scheduled report generation and execution tracking** for recurring content workflows, and launched the **React Native** application on **Google Play** as an end-to-end mobile AI product.

AI-Powered Market Analysis System

09/2026 - Present

AI - Developer - Python, Pandas, NumPy, OpenAI API

- Built a **Pandas/NumPy market-data pipeline** integrating U.S. equity prices and 10-year Treasury yields to compute **breadth and trend signals** and run regressions measuring sector exposure to yield changes.
- Integrated the **OpenAI API** to interpret indicators and regression outputs and generate structured summaries of market participation, trend conditions, and **sector-level interest-rate risk**.

Experience and Research

YMCA, Worcester, MA

05/2024 - 06/2024

Program and Data Support Assistant

- Built a **Python/SQL data pipeline** with **Pandas** and **NumPy** to clean and analyze **39 years of program data**.
- Applied **EDA**, **segmentation**, **longitudinal trend analysis**, and **data visualization** to identify engagement patterns and inform program redesign, contributing to an **18% year-over-year increase in participation**.

New York University, New York, New York

02/2022 - 12/2022

Researcher and Three-Member Team Lead - Charlotte Hornets Brand Equity Research

- Designed and analyzed a fan survey using **Likert-scale questions**, **cross-tabulation**, and **demographic segmentation** to assess awareness, loyalty, engagement, and purchase behavior, and eventually published findings in a research paper.