

# Yuheng Li

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## Education

University of California, San Diego

Master of Science in Computer Science

La Jolla, CA

Expected Dec. 2026

University of California, Los Angeles

Bachelor of Science in Mathematics of Computation

Los Angeles, CA

Jun. 2025

## Skills

**Programming Languages:** Python, C/C++, Java, MATLAB, Bash

**Frameworks & Tools:** PyTorch, HuggingFace, LangGraph, scikit-learn, Apache Spark, Git, Fast API, AWS

**Data & Storage:** MySQL, PostgreSQL, MongoDB, Faiss

**Other:** Large language Model, Natural Language Processing, AI Agent, Recommender System

## Experience

Advance.AI

Machine Learning Engineer Intern

Singapore

Jun. 2025 – Sep. 2025

- Developed an end-to-end **OCR-LLM** system integrating text detection, recognition, and classification for large-scale automated annotation of **50k+** complex ID documents, achieving labeling accuracy exceeding **98%**.
- Fine-tuned a **multimodal** LayoutLM in **PyTorch** by integrating visual patch embeddings with textual signals; leveraged image context to resolve OCR ambiguities, increasing field-level **F1-score by 11%**.
- Implemented a knowledge **distillation** workflow to synthesize training samples from unlabeled data, extending model capabilities to diverse document layouts by **~50%** while reducing annotation time by **~95%**.
- Evaluated and deployed the optimal model for testing as a high-throughput **FastAPI** service containerized with **Docker**; optimized the end-to-end latency by **15%** via quantization to support real-time identity verification.

Goldstate Securities Co., Ltd.

Data Scientist Intern

Shenzhen, China

Jul. 2024 – Sep. 2024

- Implemented a scalable data processing pipeline using **Apache Spark** to handle large-scale historical datasets, optimizing dataframe operations to reduce data retrieval time by **40%** for downstream trading analysis.
- Developed a **LSTM** model to predict market trends, synthesizing features from pricing and fundamental indicators to achieve a **13%** increase in prediction accuracy compared to previous baselines.
- Designed a **backtesting** workflow to validate algorithm performance across 2 years of data, implementing automated evaluation scripts to verify model stability and robustness before production deployment.
- Built an LLM-driven **RAG** application to analyze structured portfolio holdings, automating the generation of daily strategy reports and risk warnings, which reduced manual monitoring workload by **~90%**.

## Research

LLM-Driven Generative Engine Optimization | Prof. Yiyang Zhang

Oct. 2025 – Jan. 2026

- Co-authored **SourceBench**: Can LLMs Find Quality Web Sources? First benchmark to evaluate the reliability and safety of web sources referenced by LLM and other AI search systems(*ICML 2026 Under Review*).
- Implemented a workflow using Gemini and **LangChain** to iteratively refine web content, enhancing visibility and citation likelihood in Generative Engine responses.
- Designed an evaluation framework using **LLM-as-a-judge** to track optimization effects, achieving a **~12%** uplift in ranking metrics while maintaining **>0.95** content integrity.

## Projects

Two-Stage Sequential Recommender System | PyTorch, SASRec, DSSM

Oct. 2025 – Dec. 2025

- Designed and implemented a two-stage recommendation framework using the KuaiSAR dataset, integrating a **DSSM-based** recall stage with a **Transformer** ranking stage to balance system efficiency and precision.
- Developed and benchmarked a **SASRec** ranking model to capture long-range sequential dependencies in user behavior, achieving a **2×** improvement in **Hit Rate@50** compared to ItemCF and NeuMF baselines.

RAG-powered Real Estate Search Assistant | LangGraph, RAG, SQL, Vector Search

Jun. 2025 – Sep. 2025

- Developed an **RAG-powered** real estate assistant with **LangGraph** that reduced search effort by implementing a **two-stage** retrieval process, ensuring users receive relevant recommendations even without exact matches.
- Implemented robust **tool-use** capabilities that convert natural language queries into **SQL** filters and **vector** search queries for property retrieval, leveraging prompt engineering to identify user intent and invoke tools.