Yuheng Li

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EDUCATION

University of California, Los Angeles **Los Angeles, CA**
*Bachelor of Science in **Mathematics of Computation*** *Sep 2023 – Jun 2025*

- **GPA:** 3.82/4.00; **Honors & Awards:** Dean's Honors List
- **Relevant Courses:** Analysis, Deep Learning for Computer Vision, Data Science, Linear Algebra, Probability, Mathematical Statistics, Numerical Methods, Data Structure, Optimization, C++/Java Programming

Santa Monica College **Santa Monica, CA**
*Major in **Computer Science*** *Sep 2021 – Jun 2023*

- **GPA:** 3.89/4.00; **Honors & Awards:** Dean's Honors List (every semester); Pete Barrett Memorial Scholarship

INTERNSHIPS

Goldstate Securities Co., Ltd. | *Software Development Intern* **Shenzhen, China** | *Jul 2024 – Sep 2024*

- Developed stock volume indicators, including volume ratio calculation, volume fluctuation monitoring, and price fluctuation analysis, to identify trading anomalies and provide actionable insights for market analysis.
- Employed Python to create methods for key volume and price indicators; managed large-scale stock trading datasets using Pandas and quantitative finance packages to support investment decisions.
- Designed a GUI to streamline file selection and enable easy configuration of take-profit and stop-loss parameters. Automated daily position reporting from raw Excel data and implemented email automation.

PROJECTS

Linguistic Binding Enhancement in Diffusion Models **Los Angeles, CA**
Project for Deep Learning for Computer Vison, CS163 *Nov 2024 – Present*

- Enhanced text-to-image generation capabilities in Stable Diffusion by developing an improved linguistic binding mechanism to address attribute misbinding and semantic leakage issues.
- Proposed a new loss function incorporating Shannon entropy to optimize cross-attention maps and improve associations between modifiers and entities in generated images.
- Worked on improving the SynGen-based diffusion model with algorithms designed to encourage similarity between syntactically related attention maps while promoting dissimilarity for unrelated elements.

Document Revision and Incremental Update Ststem Development **Los Angeles, CA**
Project II for Intro to Computer Science II (Data Structure and Algorithms), CS32 *May 2024 – Jun 2024*

- Developed an efficient document revision and incremental update system for a virtual retailer, significantly reducing the cost of updating daily inventory documents.
- Solved performance problems in large-scale file processing by generating revision files containing variance instructions, enabling the conversion of the previous day's inventory file to the current day's updated version.

Hotel Booking Dataset Analysis **Los Angeles, CA**
Project for Intro to Data Science, ECE M148 *May 2024 – Jun 2024*

- Processed the hotel booking dataset on Kaggle through data preprocessing, feature engineering, and model optimization, including missing value processing and One-Hot encoding of category variables.
- Applied machine learning algorithms for classification, including Decision Trees, Logistic Regression, Multi-Layer Perceptron, and hyper-parameter tuned the model using Grid Search and Stochastic Search.
- Compared model performance before and after using Principal Component Analysis, which significantly improved the accuracy of the decision tree model (by about 10%) while reducing data dimensionality.

Temple Adventure Game Development **Los Angeles, CA**
Project I for Intro to Computer Science II (Data Structure and Algorithms), CS32 *Mar 2024 – May 2024*

- Used data structures such as linked lists, queues, and stacks to implement character action sequences, item management, and map generation in the game; designed and implemented the core logic of the game.
- Programmed in C++ and utilized recursive algorithms to implement map generation and pathfinding.

EXTRACURRICULAR ACTIVITIES

itisOVERDUE | *Volunteer* **Santa Monica, CA** | *Jan 2022 – May 2022*

- Created advertising on TikTok for local cleanup volunteering activity, composed videos, and inserted Chinese subtitles to reach new Chinese immigrants, and increased participation among those not proficient in English.

SKILLS

Programming: C/C++, Java, Python (PyTorch, Scikit-learn), SQL; **Languages:** Mandarin (native), English (fluent)