David Ho

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EDUCATION

University of Southern California   August 2022 - May 2026
Master of Science, Financial Engineering   GPA: 3.80
Bachelor of Science, Computer Science

Coursework | Software Engineering, Artificial Intelligence, Operating Systems, Internetworking, Algorithms, Data Structures, Applied Python, Probability Theory, Multivariable Calculus
Extracurriculars | Business Technology Group, Asian Pacific Cinema Association, Student Symphony Orchestra

PROJECTS

Poker Bot | Python, PyTorch, Scikit-learn   September 2024
- Designed **neural network** to predict optimal poker moves based on player hands, table cards and opponent actions
- **Preprocessed and encoded** poker data for model training, enabling effective representation of game states
- Trained model on over 10,000 simulated hands, **boosting decision-making accuracy by 15%**

Options Trading Bot | C++   July 2024
- Developed automated bot for trading options contracts through **Interactive Brokers Trader Workstation API**
- Calculated deviations from **real-time** moving average thresholds to buy and sell call options
- Added **multithreading** for reduced latency and **error handling** to ensure robust and reliable trading operations
- Validated bot through historical data, **increasing profitability by 8%** during backtesting

StoreIt | Java, MySQL, HTML, CSS, JavaScript, React, Node.js, Git   November 2023
- Led team to develop web app for students to rent storage spaces near USC campus
- Created **chat and file upload feature** between customers and sellers using React user interface, Node.js back end, Java servlets with AJAX and MySQL database to store information
- Held weekly **scrum meetings** to coordinate strategy, ideate, debug and run tests for quality assurance

Custom Cache with Dynamic Memory Allocation | C, Linux, Docker   November 2023
- Replicated behavior of CPU cache, **handling memory traces** with FIFO and LRU eviction policies
- Implemented custom malloc, free and realloc functions, **reducing average memory modification time complexity by 15%**

EXPERIENCE

Course Producer   August 2023 - Present
USC Viterbi School of Engineering - Los Angeles, CA
- Lead 7 hours of office hours weekly, teaching 300+ students to master **Java, C and x86 assembly programming**, resulting in **15-point increase** in median assignment grades after 10 weeks
- Analyze data and feedback from assignment and exam grades to address shortcomings in class curriculum by revising assignments and material to **improve student performance and comprehension**

Data Engineering Intern   June 2023 - August 2023
Federal Reserve Bank - Chicago, IL
- Scanned and migrated thousands of physical document archives to Federal Reserve's **online file server with Python and MySQL**, making files searchable by keyword and **strengthening bank's security and backup systems**
- Utilized **Python libraries** to filter, edit and send Excel data through Microsoft Exchange, **saving legal team over 2000 work-hours** in determining correct documents in archives to declassify or destroy
- Received recognition from Federal Reserve Board of Governors for completion of projects

SKILLS

Code | C, C++, x86 assembly, Python, Java, MySQL, HTML, CSS, JavaScript
Technologies | React, Node.js, Git, Pandas, Numpy, PyTorch, Scikit-learn, Unix, Linux, TCP/IP, Docker
Project Management | Agile, Scrum, Jira, Confluence, unit testing, UX design and best practices
Certifications | Akuna Capital University Options 101
Languages | English, Mandarin, Spanish