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 **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%**
- Utilized | **Python** | **Numpy** | **PyTorch** | **Scikit-learn** | **supervised machine learning**

Options Trading Bot **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
- Utilized | **C++** | **JSON for Modern C++** | **real-time data processing** | **algorithmic trading**

StoreIt **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
- Utilized | **Java** | **MySQL** | **HTML** | **CSS** | **JavaScript** | **React** | **Node.js** | **Git** | **full-stack development**

Custom Cache with Dynamic Memory Allocation **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%**
- Utilized | **C** | **Linux** | **Docker** | **computer architecture**

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