Kyle He

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Education

University of Southern California **Expected Graduation**: May 2026
B.S. + M.S. in Computer Science GPA: 3.9/4.0, Major GPA: 4.0/4.0

Honors: Presidential Half-Tuition Scholarship, Viterbi Dean's List, Academic Achievement Award

Relevant Coursework: Operating Systems, Computer Systems, Artificial Intelligence, Embedded Systems, Algorithms, Data Structures, Full-Stack Web Development, Discrete Math, Linear Algebra, Probability Theory, *Machine Learning, *Functional Programming *(* scheduled)*

Technical Skills

Languages: Python, C++, C, C#, Java, Rust, OCaml, Javascript, HTML/CSS, SQL

Libraries/Frameworks: Pandas, PyTorch, NumPy, Svelte, Unity, AWS, Docker, Vercel

Experience

Bloomberg *Software Engineering Intern* June 2024 - Present
- Developed a high-performance, expressive query filter language library in C++ for TickerPlant, enabling complex conditional filtering on market event data and eliminating the need for custom business logic functions in code.
- TickerPlant is an in-house, distributed, low-latency timeseries database for market events that processes over 80 billion queries a day and serves data to over 70% of all active terminal screens.

USC Viterbi School of Engineering *Course Producer* August 2023 - July 2024
- Designing course content and holding office hours for **CSCI 170 (Discrete Math)** during Fall 2023 and Spring 2024.
- Teaching topics like asymptotic notation, algorithm analysis, graphs, counting, and first-order logic.

VMware *Software Engineering Intern* June 2023 - August 2023
- Developed a bug triage tool to automatically detect duplicate bugs using deep learning for the vSAN System Test team.
- Designed and trained a **Siamese Neural Network** using **PyTorch** to reduce duplicate bug entries by **15%**.
- Created a full-stack web tool with **Angular.JS** and **Flask**.

USC GLAMOR Lab *Undergraduate Researcher* April 2023 - July 2024
- Developed and trained reinforcement learning models using **Stable Baselines**, devising new policy networks to improve collaboration through communication in collaborative games like Overcooked.

Projects

Programming Language Interpreter *Python*
- Built an interpreter for a dynamically-typed, object-oriented language with support for variables, functions, control flow, first-class functions, block scoping, and error handling based on Lox.
- Implemented lexical analysis, parsing, and intermediate representation for efficient execution.

P2HB Chat Bot *Python, MongoDB*
- Built a chat-based game on Discord, connecting **500,000 members and 12,000 active users online across 6,600 servers**.
- Designed and implemented features like multiplayer tournaments, Pokémon trivia games, lottery system, and economy.
- Source Code: https://github.com/p2hb/p2hb

Unus Motus (Game) *C#, Unity, MongoDB*
- Created a tile-based puzzle game with C# on **Unity**, featuring 14 unique levels and a leaderboard stored on **MongoDB**.
- Try it here: https://keeelay.itch.io/unus-motus

Leadership & Involvements

USC Makers *Project Manager, Software Engineer* September 2022 - Present
- Led a team of 6 students to build a mechatronics project over the course of a year, presenting updates to club sponsors like the Ming Hsieh Department of ECE, Tesla, and Microsoft.
- Projects: Ferrofluid Music Display, Robotic Stargazing Laser Pointer