David Lai

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EDUCATION

Stony Brook University | B.S. Computer Science **Expected May 2026**

- Relevant Coursework: Data Structures and Algorithms | Applied Linear Algebra | Discrete Mathematics
- Clubs: Competitive Programming Team| Computing Society at Stony Brook | Math Club | GPA: 4.0

SKILLS

- Proficient: C, C++, Python, JavaScript, React, Git | Familiar: HTML/CSS, Java, SQL, AWS

EXPERIENCE

AMP Scholar **July 2023 - August 2023**

Jane Street | New York, New York

- Handpicked as one of 70 selected for five-week, fully subsidized residential program at Jane Street's Academy of Math and Programming.
- Explored combinatorics and number theory with past IMO medalists and coaches. Created graph theory projects to address linguistic and game theory problems.
- Winner of Jane Street's ETC (Electronic Trading Competition). Developed quantitative trading strategies to automate market exchanges.

Computer Science Student **June 2022 - August 2022**

Stanford University, Stanford CA

- Attended Stanford University's Summer Session, an eight week program designed to introduce high school students to college coursework and life on campus.
- Took two introductory courses in computer algorithms and calculus.

Computer Science Teaching Assistant **September 2021 - May 2022**

Tzu Chi Academy | Long Island, NY

- Oversaw a class of 15 middle schoolers, nurturing young minds in programming.
- Taught basic coding concepts in Python, as well as an introductory understanding of programming ethics.
- Communicated topics such as proper code formatting, object oriented programming, and basic search algorithms.

PERSONAL PROJECTS

Spotify Connect **February 2024**

- Developed a full stack, working website that matched Spotify Users based on their song preferences.
- Integrated **MongoDB**, OAuth, and Flask to ultimately finish fourth place at school hackathon.

Wordle AI **July 2023 - August 2023**

- Scientifically tested and developed 3 AI models to maximize efficiency in the game Wordle.
- Utilized object oriented programming in **Python**, Shannon entropy, and the SciPy library. Achieved an average of 3.5 guesses per game.

Parking Garage Simulator **December 2022 - February 2023**

- Developed a fully functional parking garage simulator in **Java**, applying object oriented programming principles.
- Incorporated user-defined parameters for customizing garage size, vehicle types, and traffic intensity, adding to the project's versatility.

Hand Tracker **April 2021 - May 2021**

- Built a hand tracker in Python that recognizes and detects different hand signs via the user's web camera.
- Implemented Google's MediaPipe pipeline, in conjunction with the **OpenCV** AI.

Tetris Replica **December 2020 - January 2021**

- Programmed a classic Tetris replica using Python, demonstrating core software skills and solving complex challenges involving game design.
- Designed and implemented a graphical user interface (**GUI**) with the Pygame library, offering an engaging and interactive gaming experience.