

# Jack Hansen

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## EDUCATION

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### University of California, Berkeley

*Bachelor of Arts in Computer Science, Bachelor of Arts in Mathematics*

Aug. 2022 – May 2026

*GPA: 3.95*

### Carlmont High School

*Relevant Coursework: Calculus; Multivariable Calculus*

Aug. 2018 – May 2022

*GPA: 4.20*

## EXPERIENCE

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### Upper Division Math Tutor

*UC Berkeley*

June 2024 – Present

*Berkeley, CA*

- Provides academic support for upper division math classes including Abstract Linear Algebra, Abstract Algebra, and Real Analysis
- Uses creative pedagogy to build students' mathematical expertise and confidence
- Facilitated Topic Review Sessions to reinforce key course matter and prepare students for exams

### Computer Science 61C (Computer Architecture) Academic Intern

*UC Berkeley*

Aug 2024 – Present

*Berkeley, CA*

- Supports students in office hours on homework and projects in areas such as C, RISC-V Assembly, and hardware.
- Uses pedagogy personalized for every student to ensure optimal learning experience.

## PROJECTS

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### Memory Allocator | C

- Implemented memory allocation/deallocation functions from scratch in C
- Efficiently allocates memory to minimize costly system calls
- Coalesces unused memory to prevent fragmentation, reducing necessary system calls by 75%

### Playlist Generator | Python, PyTorch, NumPy, Pandas

- Took first space in SCAI is No Limit Spring 2023 AI design competition
- Used a PyTorch neural network to identify Spotify song features, then matched similar songs
- Used Fourier transform to improve accuracy of the neural network

## EXTRA-CURRICULAR ACTIVITIES

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### FRC Robotics, Programmer

2020–2022

- Refactored, bug-fixed, documented, and added new features to robot drivetrain.
- Wrote code for the 2021 FRC At Home challenge

### Carlmont Journalism, Managing Editor, Staff Writer, Podcaster

2019–2022

- Mentored over 20 writers over two years as Managing Editor, improving their newswriting abilities. Worked with each writer for a semester, providing feedback and grades.
- Wrote and designed multi-page articles bimonthly. Interviewed 20+ people for profiles, opinion pieces, and news articles.

## TECHNICAL SKILLS AND RELEVANT COURSEWORK

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**Languages:** Python, C/C++, Java, RISC-V Assembly

**Developer Tools:** Git, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse

**Libraries:** Pandas, NumPy, Matplotlib

**Relevant Coursework:** Operating Systems; Linear Algebra; Data Structures and Algorithms; Discrete Math; Probability Theory; Computer Architecture; Computer Security; Real Analysis and Measure Theory, Abstract Algebra