MATTHEW LEE

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EDUCATION

University of California, Berkeley **Expected May 2024**

BA Computer Science + BA Data Science, GPA 4.0

- **Activities**: Web Development at Berkeley, Extended Reality at Berkeley, Cal Hacks, UC Berkeley IEEE Student Branch, Computer Science Undergraduate Association
- **Relevant coursework:** Structure and Interpretation of Computer Programs, Foundations of Data Science, Designing Information Devices and Systems, Discrete Mathematics, Calculus, Introduction to Business

EXPERIENCE

Web Development at Berkeley **Berkeley, California**

Full Stack Developer Sept. 2021 - Present

- Developing real-time multiplayer trading platform for bid-ask spread quantitative finance education.
- Implementing UI, user room management, and game logic with Next.js, Express, Flask, and MongoDB.

Extended Reality at Berkeley **Berkeley, California**

Virtual Reality Software Engineer Sept. 2021 - Dec. 2021

- Designed an OpenXR-based hand-tracking system for interaction in Oculus Quest 2 virtual environments.
- Created collision capsule structure and functionality for object manipulation using Unity and C++.

Hack+ **Fremont, California**

Software Engineering Intern Jun. 2021 - Sept. 2021

- Hack+ supports organizations and events with legal backend and banking services (over $2M transacted).
- Developed a revamped online portal using React, Node.js, and Firebase to provide organizations with a centralized access point for services, transaction records, invoice management, and member coordination.
- Engineered an automated process for more efficient approval and onboarding of Hack+ applicants.

University of California, Santa Barbara **Santa Barbara, California**

Machine Learning Researcher May 2020 - Aug. 2020

- Architected a convolutional neural network EEG-based authentication system with P300 event-related potential as input by using PyTorch and Jupyter Notebooks; assessed efficacy with Numpy and Matplotlib.
- Examined methods to reduce impact of input noise and environmental factors on system performance.
- Compiled poster, presentation, and manuscript for inclusion into the RMP Program Symposium.

California Institute of Technology **Pasadena, California**

Network Theory Researcher Aug. 2019 - May 2020

- Studied algorithms and theory behind fundamental concepts in network theory under the Hassibi Group.
- Designed and built a website using React and Firebase to collect crowdsourced data on strawberry breed classification and tested performance of different clustering algorithms using MATLAB.

PROJECTS

- **Unify -** *React, Node.js, Firebase*. A platform that connects high school students with current college students to prove personalized insight on finances, major curriculums, and holistic university experiences.
- **Book Rank Predictor** - *Scikit-learn, Pandas.* A random forest model that utilizes the metadata of a book (i.e. title, author, publication date) to forecast whether it reaches the New York Times Best Sellers or not, coupled with a regression model that predicts the rank trajectory of the book across weeks.
- **An[Ti]lles** - *Java, OpenCV.* Control system for FIRST Robotics Competition robot with vision pipeline for automated target detection, and PID controller guided drive and mechanism operation.

ADDITIONAL INFORMATION

- **Skills:** Python, HTML/CSS/JS, React, Node.js, Firebase, C/C++, Java, Unity, Tensorflow, Google Cloud, Figma
- **Awards:** Regents' and Chancellor's Scholarship, Cal Alumni Association Leadership Award Scholarship, American Invitational Mathematics Exam 4x Qualifier, USA Computing Olympiad Silver
- **Interests**: RnB Music, Tea Drinking, Hiking, Basketball, Biking, Reading, Museums