

# Ethan Lee

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## Education

**University of California Los Angeles**

Los Angeles, CA

*Bachelor of Science in Computer Science*

*Sep. 2023 - June 2027*

- Relevant Coursework: Data Structures and Algorithms, Intro to Computer Organization, Software Construction, Discrete Mathematics, Linear Algebra and Applications, Machine Learning

## Experience

**Bruin Plan** | MongoDB, Express, React, Node.js, Passport.js, JavaScript

April 2025 - May 2025

*Project Lead*

*Los Angeles, CA*

- Engineered **full-stack** app with **Node.js** and **React** to optimize schedules using **188** UCLA course entries
- Configured **MongoDB** database with **IP whitelisting** and role-based access, enabling **cloud** collaboration
- Integrated **Google OAuth 2.0** with **Passport.js** and **RESTful** login routes, securing **500+** user accounts
- Developed optimization algorithm using **JavaScript** to prioritize class time, instructor ratings, and workload

**Automated Pet Feeder Web App** | C++, Firebase, React, JavaScript, Express

May 2024 - June 2024

*Backend and Electronics Team Member*

*Los Angeles, CA*

- Developed **REST APIs** to manage **real-time** feeder control and updates between frontend and hardware
- Established SSL-encrypted Wi-Fi connection between web app and pet feeder using **Arduino** WiFi library
- Managed hardware integration by wiring the **Arduino** system to servo motors, water pump, and sensors

## Projects

**Journal Buddy** | Next.js, TypeScript, Prisma, PostgreSQL, OpenAI

June 2025 - Present

- Developed **full-stack** journaling platform using **Next.js**, **TypeScript**, and **Prisma**, supporting **300+** users
- Designed frontend with reusable **Tailwind** and **Recharts** components resulting in **40%** faster dev cycles
- Integrated **OpenAI** and **Pinecone** vector search to process **1,000+** entries, increasing engagement by **60%**
- Deployed on **Vercel** with **CI/CD** + **NextAuth.js**, reducing deployment time by **80%** w/ **99.9%** uptime

**Digit Classification Model** | PyTorch, Python, CNNs, Data Augmentation

Oct. 2024 - Dec. 2024

- Engineered custom CNN for digit recognition with **99.9%** accuracy on MNIST dataset using **PyTorch**
- Visualized **training metrics** using **Matplotlib** to improve model performance by **15%** during testing phase
- Created data augmentation pipeline using **PyTorch** to enhance model generalization and reduce overfitting

**Published Video Games** | Unity, C#, C++, Git, Github

Sep. 2023 - March 2024

- *Frogs Go Nuclear*: 2D Platformer developed in Unity
  - Led a team of **5** developers, assigning tasks and fostering open communication to drive success
  - Leveraged **C#** and **Unity** to implement robust user-controlled mechanics and interactive elements
  - Streamlined collaboration with **50+** Git/GitHub commits, ensuring version control and code quality
- *Marble Madness*: 2D Dungeon crawler developed in C++
  - Custom-level creation/loading system, discrete collision detection, and sprite-based graphics
  - Designed **10** enemy and interactive type elements using **polymorphism** to enhance gameplay
  - Reduced redundancy to streamline code by **20%** by integrating inheritance-type game architecture

## Technical Skills

**Languages:** C++/ C#, TypeScript, JavaScript, Python, HTML/ CSS

**Frameworks:** React, Express, Next.js

**Tools:** Git, Docker, Google Cloud Platform, VS Code, Unity, Unreal Engine, Linux, Vercel, Node.js

**Libraries:** PyTorch, TensorFlow, Matplotlib, pandas, Selenium