

SIDDHARTH BALAJI

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Education

California Polytechnic State University, San Luis Obispo

Bachelor of Engineering in Computer Science

Expected Graduation: June 2028

San Luis Obispo, CA

Work Experience

Lifetime Activities

Activities Coach

July 2024 – November 2024; June 2025 – August 2025

Cupertino, CA

- Planned and led engaging group activities for children ages 6–15
- Conducted lessons with class sizes of 15+ students
- Ensured a safe and inclusive environment by supervising and responding to participant needs

Projects

Research Paper | *PDF* | *Source Code*

Machine Learning | **Federated Learning** | **Python**

- * Authored a **research paper** under mentorship of a **Stanford PHD Student**, comparing AlexNet and classic CNN models in federated learning environments
- * Achieved **93% accuracy** using AlexNet and **90% accuracy** with a traditional CNN model

Patent Prior Art Discovery System | *Source Code*

Python | **MCP** | **React**

- * Building an automated system that reduces patent analysis time for lawyers from **20+ hours** to under **10 minutes**
- * Integrated **Pinecone** for semantic patent comparison, **PostgreSQL** for scalable storage, and **Claude** as the MCP host
- * Designed user-friendly workflows to streamline prior art discovery, improving legal research efficiency

GreenThumb | *Source Code*

GoLang | **Typescript**

- * Developed a cross-platform mobile gardening app that gamifies plant care by enabling users to nurture home plants as virtual pets, increasing user engagement and plant health awareness
- * Implemented scalable backend services using **GoLang** with RESTful APIs hosted on **Render.com**, ensuring fast and reliable data handling
- * Integrated **Supabase** for real-time database management and storage, and designed the frontend using **React Native**, for clean UI/UX across iOS and Android devices

Log Analytics Project | *Source Code*

Go | **React** | **Redis**

- * Building a web application for real-time log aggregation and search, enabling rapid troubleshooting for developers
- * Backend built with **Go** and Frontend developed using **React**
- * Implemented **Redis Streams** for efficient real-time log streaming and buffering

Leadership

School Clubs

August 2021 - May 2025

- * Officers for **3 Homestead High School clubs**
- * Hosted meetings, planned events, and collaborated with members
- * For **Science National Honor Society**, helped **organize STEM Night**, the largest collection of STEM Clubs at Homestead High School

Technical Skills

Languages: Python, Java, SQL, HTML5, CSS, TypeScript, Go, JavaScript

Developer Tools: Git, Docker, Redis

Libraries, Frameworks, APIs: ReactJS, ReactNative, OpenAI API, NodeJS, ExpressJS, MCP