

Ember Lu

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EDUCATION

University of California, Santa Cruz
Bachelor of Science in Computer Science, 4.0 GPA

Santa Cruz, CA
Sept. 2024 – Dec. 2027

American High School
4.3 GPA

Fremont, CA
Aug. 2020 – May 2024

EXPERIENCE

Software Engineering Intern
Overture Maps Foundation

Sept. 2025 – Dec. 2025
Santa Cruz, CA

- Adapted 3+ lightweight language and embedding models (Meta, Microsoft, Google) into high-performing sequence-classification models tailored for intaking 3K+ geospatial data points.
- Optimized model performance to 90%+ by implementing PyTorch optimization pipelines, LoRA fine-tuning, and maintaining thorough documentation of OKR progression.

Software Engineering Intern
PicnicHealth

Jul. 2025 – Sept. 2025
San Francisco, CA

- Built 2 full-stack AI features (React, Node.js) that accelerated a clinical trial record workflow by 95%
- Integrated scalable APIs and UIs with REST controllers, real-time React/Apollo GraphQL components, Temporal workflow endpoint calls, and PostgreSQL/Hasura data operations
- Pioneered groundwork for applying AI to streamline health tech research study operations within future projects

Software Engineering Intern
Biomedical AI Lab

Jan. 2025 – Present
Santa Cruz, CA

- Processed 150+ Hepatitis B capsid PDB files with MDTraj/MDAnalysis and scripted automated protein dimer identification via center-of-mass proximity
- Simulated protein structures with OpenMM/ChimeraX to generate PDB data for ML model training within a Linux server environment under Professor Razvan Marinescu

PROJECTS

CalmSense | *Pytorch*

Jun. 2025

- Using PyTorch and health data to build a neural network that detects oncoming anxiety attacks and warns users
- Achieved 3rd Place in the Santa Cruz Artificial Intelligence hackathon

OccasionAll | *Flask, Gemini AI, Spotify API*

Oct. 2024

- Developed Full-stack web app utilizes Flask, Gemini AI, and Spotify API to generate an enhanced Spotify playlist, customized to the user's description of their event

2x Machine Learning Research Papers | *Python, Matplotlib, Sci-kit Learn*

2020, 2022-2023

- Led a research publication and a team of 4+ to build a RandomForestClassifier using data from 19 public health factors to determine COVID-19 risk levels by US county
- Directed a team of 4+ in statistical analysis of the encrypted Voynich Manuscript to decode its unknown language and co-wrote a pending research paper discussing its results

LEADERSHIP

Marketing Lead | *Santa Cruz Artificial Intelligence*

Aug. 2025 – Present

Director of Internal Affairs | *Google Developer Group*

Jun. 2025 – Present

President | *Girls Who Code*

Jan. 2025 – Present

TECHNICAL SKILLS

Languages: Python, TypeScript, Java, C/C++, SQL, R, JavaScript, HTML/CSS, English, Mandarin

Frameworks/Technologies: React, Node.js, Flask, Hasura, PostgreSQL, Docker, Linux

Developer Tools: Git, Google Cloud Platform, Temporal, Linear, Figma, Microsoft Office

Relevant Coursework: Data Structures and Algorithms, Computer Architecture, Principles of Electronics,

Foundations of Programming Languages, Calculus III (Fall 2025-Spring 2026), Computer Systems/Assembly, Discrete Math, Linear Algebra, Calculus II, Python Abstractions