

Jaydon Chen

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Education

California Polytechnic State University San Luis Obispo

B.S. in Computer Science

Expected May 2028

GPA: 3.7

Experience

Project Lead

Sep 2025 - Present

Cal Poly CodeBox

San Luis Obispo, CA

- Drove launch execution for PolyBuys by translating product priorities into scoped engineering work, coordinating issue triage, and reviewing core marketplace features for reliability, security, maintainability, and release readiness.
- Architected the application stack across authentication, listing creation, search/filtering, messaging, and moderation using Next.js, Convex, and PostgreSQL, aligning core marketplace flows with launch, trust, and student-safety requirements.
- Led a 9-person team to launch PolyBuys, an iOS App Store marketplace for .edu-verified students with 100+ users, while defining launch scope, trust-and-safety requirements, release metrics, and rollout readiness.

Undergraduate Researcher

Sep 2024 - Present

Cal Poly Bioinformatics Research Group

San Luis Obispo, CA

- Architected a local-first control plane with typed capability adapters, approval-gated workflows, PostgreSQL/pgvector state, isolated CPU/GPU workers, and versioned artifacts for auditable research runs.
- Designed the BiRG Agent System, a researcher-initiated platform for evidence mapping, reproducible computational analyses, independent critique, replication, and replayable decision records.
- Provided technical consulting for the nonprofit Noor Clinic during its Athena EHR transition by mapping clinic workflows into data models, reporting requirements, dashboard needs, and implementation-ready analytics specs.

Student Researcher

Jun 2023 - Aug 2023

Stanford Gomez-Ospina Lab

Palo Alto, CA

- Explored potential dementia therapies by harvesting, culturing, and CRISPR-editing hematopoietic stem cells, achieving 20% editing efficiency and successful progranulin protein expression.
- Conducted computational analysis to streamline experimental timelines, identify key variables in stem cell behavior, and improve experimental efficiency, reproducibility, throughput, and study-planning decisions.
- Presented posters at research conferences, communicating experimental methodology, computational data analysis, key findings, and therapeutic implications while informing future dementia therapy study design.

Projects

CSUB Procurement Assistant | React, Python, AWS Lambda, Amazon Bedrock, Pydantic AI

- Developed and deployed a role-aware procurement assistant for CSUB using React, Python, AWS Lambda, API Gateway, Amazon Bedrock, and Pydantic AI for guided purchasing support.
- Indexed 80 procurement source files, including 17 training videos split into 300 timestamped retrieval segments, with deterministic public-source filtering and citation checks.
- Implemented RAG with an Amazon Bedrock Knowledge Base and source-aware chunking, achieving 34/35 exact-source hits across public-source-eligible retrieval scenarios with auditable citations.

Biomedical GraphRAG QA System | Python, PyTorch, NetworkX, vLLM, RAG

- Implemented NLP-based intent classification to route biomedical queries across retrieval and graph reasoning paths using Python, PyTorch, NetworkX, and vLLM for context-aware answers.
- Designed and deployed a knowledge-graph QA system over 2K+ biomedical documents with document retrieval, graph traversal, entity relationships, and multi-step reasoning workflows for literature review.
- Improved local inference throughput by 2.1x and scaled the literature pipeline to 50K+ biomedical documents while reducing latency by 40% across biomedical QA workloads.

Technical Skills

Languages: Python, TypeScript, Java, C, C++, JavaScript, SQL, R

Full-Stack / Backend: React, PostgreSQL, authentication systems, Next.js, Convex, Flask, SQLAlchemy, Supabase, Prisma

AI / Data / Scientific Computing: RAG, systems debugging, PyTorch, vLLM, NetworkX, Pandas, NumPy, scikit-learn, Plotly, knowledge graphs, GPU computing, data analysis, fine-tuning

Developer Tools: Git, Docker, GitHub Actions, Vercel, Expo/EAS, Postman, Unix/Linux, CI/CD