Alexander Chin

+1 (415) 688-9097 | azchin@ucsd.edu | linkedin.com/in/azchin | github.com/alchin2

Education

University of California San Diego **Sep 2025 – Jun 2028**
B.S. in Mathematics-Computer Science, Minor in Cognitive Science *GPA: 3.7/4.0*

Technical Skills

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

ML: PyTorch, Hugging Face, CLIP, DINOv2/v3, YOLO, Whisper, CNNs, ViTs, contrastive learning, embeddings, LLM tool use

Data & Infra: pandas, NumPy, FastAPI, PostgreSQL/TimescaleDB, MongoDB, Docker, AWS (Lightsail, S3), Linux, Git

Coursework: Machine Learning, Convex Optimization, Linear Programming, Probability & Statistics, Stochastic Processes

Experience

IBM **Lowell, MA**
Incoming Software Developer Co-op *Spring 2027*

UCSD Visual Learning Lab **La Jolla, CA**
Undergraduate Research Assistant (PI: Prof. Bria Long) *Mar 2026 – Present*

- Benchmarked representational geometry of CLIP and DINO model families on a 15,000-image dataset, computing RDMs and Spearman correlations across 54 model–metric–embedding configurations.
- Extended the lab's open-source embedding package (vllpy), used across 4 lab projects, with 12 commits adding ranked RDM analysis, a BabyView-trained DINOv3 model, and a transformers compatibility fix.
- Contributed to a data pipeline processing 5.6 GB of webcam video from 150 infant participants through an automated gaze encoder on a GPU cluster, aligning gaze measures with CLIP embedding similarities.
- Leading a study (manuscript in prep) testing whether line-drawing embeddings preserve the geometry of photo embeddings, and how training objective and data (ImageNet vs. child-egocentric video) affect it.

Association for Computing Machinery (ACM) at UCSD **La Jolla, CA**
Projects Director; previously AI Projects Mentor *Mar 2026 – Present*

- Run the project cycle for 8 SWE/AI/Design teams via standups; organized workshops and showcases drawing 250+ students.
- Mentored AI teams from model training to deployment, writing starter code (CNN, contrastive, ViT) and reviewing pull requests.

Essenergy Inc. **Milpitas, CA**
Software Engineer, Contract *Jun 2026 – Sep 2026*

- Proposed and shipped end-to-end automation of order processing with a Python/Playwright workflow on AWS Lightsail, handling 30+ weekly orders across 3 vendor portals with no manual steps.
- Cut daily remittance reconciliation from ∼30 min to under 1 min with a pipeline that auto-matches invoice numbers across 1,800+ rows from 2 vendors and flags invalid or suspicious entries.

UCSD Department of Mathematics **La Jolla, CA**
Research Intern (Advisor: Prof. Lijun Ding) *Aug 2025 – Sep 2025*

- Studied ML foundations and gradient-based optimization; trained classifiers on the MNIST and Mushroom datasets.
- Selected as 1 of 4 students from 40 applicants for the department's initial Transfer Research Experience cohort; presented a research poster to faculty and students at the end-of-session symposium.

Projects

Recall | *YOLO-World, Whisper, Claude, C++, Arduino* *Cal Hacks 13.0*

- Built a real-time assistive system for people with dementia that tracks objects in a room from one webcam, using open-vocabulary detection and a temporal state model that infers occluded objects' locations; led vision and state inference.
- Recovered 3D object positions by ray-casting detections onto a LiDAR room scan, and estimated user pose and heading to drive a Bluetooth LE wearable that points toward the object.
- Shipped on-device Whisper STT, semantic retrieval, and a grounded Claude agent answering caregiver questions; 270+ tests.

CrAIyons | *PyTorch, WebSockets* *Tech Lead, team of 6*

- Trained 4 category-specific CNNs over 60 QuickDraw classes (128×128 inputs, 128-d embeddings) for live in-game scoring.
- Replaced softmax scoring with class-centroid cosine similarity, evaluating 1, 5, and 10 centroids per class against KNN and simple-CNN baselines; raised one model's similarity score from 0.56 to 0.63.
- Diagnosed overfitting and QuickDraw-to-hand-drawn distribution shift with confusion matrices and 30-drawing test sets per category, guiding augmentation, normalization, and input-resolution experiments.

SafeStreets | *Claude, multi-agent* *UC Berkeley AI Hackathon 2026*

- Won Best Use of Claude among 200+ projects at the UC Berkeley AI Hackathon 2026 (team of 4) with a multi-agent system that turns street imagery and public records into ready-to-send city council letters.
- Co-built a two-stage vision pipeline: Claude assesses 1 satellite and 4 Street View images blind to community reports, then a separate pass corroborates each hazard against crash, 311, and news records.