

Bryan Ramirez-Gonzalez

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EDUCATION

The University of Southern California

Bachelor of Science in Computer Science, Merit Scholar, Honors Engineering Research Track

Los Angeles, CA

Expected May 2028

- Relevant Coursework: Data Structures, Algorithms, Object-Oriented Programming, Embedded Systems, Discrete Mathematics, Linear Algebra

SKILLS

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

Frameworks/Tools: LangChain, PyTorch, NumPy, Pandas, Flask, FastAPI, Matplotlib, React, Tailwind CSS, Firebase, GCP, Docker, AWS, Linux

EXPERIENCE

NVIDIA

Incoming Software Engineering Intern

Santa Clara, CA

May 2026 - August 2026

Jane Street

Undergraduate Fellow (UNBOXED 2024; FOCUS 2025 — Discovery Fellowships)

New York, NY

Jul 2024; May 2025

- Selected 1 of 37 (UNBOXED '24) and 1 of 14 (FOCUS '25); Wrote 150+ lines of SQL for data analysis and awarded a \$2,000 scholarship.
- Achieved 15% return improvement in market simulation games through 30+ hours of coursework in statistics and market-making.

USC Information Sciences Institute (ISI) — HUMANS Lab

Undergraduate Research Intern — Image-Based User Coordination Detection

Los Angeles, CA

September 2025 - Present

- Developed an image-based coordination detection research pipeline (Co-Image) that surfaces coordinated Twitter/X communities by building time-bounded image similarity networks using CLIP/DINOv2 embeddings to FAISS ANN search to Leiden/Louvain community detection.
- Implemented a full ablation framework to defend design choices, benchmarking against alternative architectures (pHash/dHash perceptual hashing, MD5/SHA256 exact hash, image-centric HDBSCAN clustering-first, direct pairwise user-pair extraction).

Undergraduate Research Intern — LLM-assisted AI for TikTok Eating-Disorder Dataset (EDTok) [[arxiv](#)]

August 2024 - May 2025

- Published EDDTok, an ethics-compliant, multimodal TikTok dataset of 43,040 videos and 577,071 comments (2019–2024), raising dataset precision by 24% using a two-stage filter: weak-supervision rules + LLM zero-shot relevance classification with prompt engineering.
- Surfaced platform-scale insights on dataset (537M views, 79.9M likes, 962k shares across 10.9k users) via longitudinal analysis, BERTopic topic modeling, and multi-label emotion classification, linking themes to affect (e.g., recovery to optimism/joy; body-image to fear/sadness).

University of Southern California — Melady Lab

Undergraduate Research Intern — Interpretable AI for Image-Text Misinformation Detection

Los Angeles, CA

July 2024 - August 2024

- Improved out-of-context image-text detection to 68% accuracy (AUC \approx 0.73) on NewsCLIPpings by adding a trained 4-class evidence query ranker over frozen CLIP/BLIP-2 encoders with CLIP-retrieved hard-negatives, improving accuracy by 5.6% over fine-tuned CLIP baselines.

ACTIVITY / EXTRACURRICULAR - 3x Hackathon Winner

- **Awards:** 2025 Caltech HackTech Winner, 2024 HackHarvard Winner, 2024 AstroHacks Winner, 2024 FTC Robotics Regional Semifinalist
- **Selective Programs:** 2025 D. E. Shaw Connect Fellowship, 2025 Two Sigma New Seekers Summit, 2025 Susquehanna (SIG) Discovery Day

PUBLICATIONS - [[Google Scholar](#)]

- C. Bickham, **B. Ramirez-Gonzalez**, M.D. Chu, K. Lerman, E. Ferrara. [EDTok: A Dataset for Eating Disorder Content on TikTok](#), ICWSM 2025

PROJECTS

Basis (Award-Winning Agentic AI Workflow Automation Platform @ **Fall 2025 USC LavaLab Winner** — github.com/bryanrg22/Basis_Info)

Co-Founder & Lead Developer

September 2025 - Present

- Built a full-stack agentic workflow for cost segregation utilizing LangGraph, achieving 95% accuracy with 2 paying customers from top-5 firms.
- Implemented an IRS-grounded Agentic RAG exposed via an MCP tool registry, combining lexical BM25 (IRS-aware tokenization) and semantic search via FAISS in parallel, while preserving structured tables intact (never chunked) and returning citation-backed results.
- Shipped a detection-first, multi-agent vision pipeline using Grounding DINO to SAM2 segmentation to region-cropping to OpenAI GPT-5.2.

Lambda Rim (Quantitative Fantasy Sports Analytics Platform — github.com/bryanrg22/lambda-rim)

Lead Developer

June 2025 - Present

- Implemented a probabilistic forecasting pipeline: Poisson modeling (season λ), 100k-run Monte Carlo simulation, and GARCH(1,1) volatility forecasting for NBA player props, achieving 78% win rate and \$10 to \$3,000 profit growth deployed as a full-stack React/Flask application.
- Built a cross-platform arbitrage engine aggregating odds from 3+ sportsbooks, computing no-vig probabilities to surface +EV opportunities.
- Engineered automated data pipelines: NBA player stats (`nba_api`), daily betting lines (e.g. PrizePicks API via local cron), hourly injury reports (PDF web scraping via Cloud Scheduler + pdfplumber), and live game settlement (ESPN API), all feeding Firestore for real-time predictions.

Swerve (Award-Winning Agentic Procurement Platform Using LangChain Agents @ **Caltech Hackathon** - github.com/bryanrg22/swerve)

Lead Developer

April 2025

- Built "Hugo," an event-driven LangChain agent that routes procurement queries through OpenAI models (intent classification \rightarrow multi-step reasoning) to generate audit-traceable low-stock alerts and reorder recommendations.
- Implemented Python/Flask APIs with CRUD to ingest CSVs and CAD files into structured Firestore collections (orders, parts, inventory, sales, supply) with Slack automation for real-time alerts; invited by Dryft to San Francisco Neo offices for post-hackathon collaboration.