

Ramon “Red” Macasa

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EDUCATION

University of California, Santa Barbara

Santa Barbara, CA

BS in Computer Science, Dean's Honors | GPA: 3.92/4.0

June 2029

- Relevant Courses: Data Structures & Algorithms, Computer Architecture, Object Oriented Programming.

EXPERIENCE

Undergraduate Research Assistant

Dec 2025 – Present

UCSB Systems and Networking Lab

Santa Barbara, CA

- Migrated 8 metric endpoints from 5s HTTP polling to Gorilla WebSocket streaming via event-driven deltas.
- Refactored NetVibe speedtest pipeline from client POST ingestion to backend Prometheus scraping across 3 microservices and a 10-node test cluster, integrating NDT7 in Go for cross-node throughput measurement.
- Implemented JWT middleware in Go securing 20+ API routes across 3 microservices with user context forwarding.
- Built Go-based ICMP library tracking RTT across 30+ targets, batching latency data into InfluxDB and SQLite.

Full-Stack Developer

Jan 2026 – Present

ACM Industry @ UCSB – IV Outfitters

Santa Barbara, CA

- Building automation system processing 25+ weekly orders with Next.js, FastAPI, and PostgreSQL.
- Integrated Printavo and vendor APIs to automate PO generation and shipment tracking workflows.
- Implemented Celery + Redis task queues running 6-hour polling cycles to sync tracking data across suppliers.
- Designed validation pipelines enforcing SKU verification to reduce manual procurement errors.

Software Engineering Intern

Jun 2025 – Sep 2025

Willamette Valley Rheumatology Clinic

Newberg, OR

- Developed Python automation tools handling patient intake and insurance processing across ~50 daily visits.
- Built data validation pipelines enforcing consistency between intake, insurance, and documentation systems.
- Analyzed bottlenecks in document retrieval and exam-room turnover to improve clinic throughput.
- Migrated manual record-management procedures into centralized digital workflows, cutting redundant data entry.

PROJECTS

agentprobe – LLM Agent Red-Team Harness | Python, Anthropic API, asyncio, SQLite | GitHub

- Built async red-team harness running 29 attacks in 116 seconds via attacker LLM and LLM-as-judge pipeline.
- Designed taxonomy of 6 agent failure modes including indirect prompt injection, confused deputy, and tool misuse.
- Parallelized attack execution with asyncio semaphores and thread-pooled SDK calls under provider rate limits.
- Surfaced authorization gap leaking customer PII on 50% of confused-deputy attacks via un gated lookup tool.

TalkThrough – AI Interview Practice | React, Deepgram, OpenAI, WebSockets | GitHub

- Built real-time AI voice interview platform at SB Hacks XII using Deepgram streaming STT and TTS.
- Implemented resume parser generating personalized behavioral questions from uploaded PDF work experience.
- Integrated OpenAI dual-grading system evaluating LeetCode solutions on correctness and explanation quality.
- Deployed full-stack app with practice history tracking and STAR-method interview feedback.

Crypto Meme Coin Radar | TypeScript, Node.js, WebSockets, React | GitHub

- Engineered spike-detection scoring from trade count and volume to flag abnormal token activity in real time.
- Streamed live Solana logs over WebSockets and aggregated token activity into 5-minute rolling statistics.
- Built React dashboard rendering live tokens, volume trends, and spike scores for rapid scanning.
- Applied backend signal smoothing to reduce false positives during fast-moving market periods.

TECHNICAL SKILLS

Programming: Go, Python, JavaScript, TypeScript, Java, Rust, C++, SQL, HTML/CSS

Infrastructure & Tools: Docker, Prometheus, InfluxDB, Redis, Celery, PostgreSQL, Git, WebSockets

Other: Distributed Systems, RESTful APIs, Real-Time Data Streaming, CI/CD