
Ramy Melo

Security-Focused Software Engineer | Application Security | DeFi Engineering

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Security-focused software engineer and founder-operator, with a path that runs from NSA cyber operations and enterprise application security to production DeFi engineering and two companies built from scratch. I build AI-native, shipping through agent orchestration, and I'm looking to help a company scale the same way: senior engineers setting direction, agents multiplying output.

EXPERIENCE

Founder and Licensed Public Adjuster, Melo Property Claims — North Carolina 2024 – Present

- Standardized claim intake, document review, case tracking, compliance, and follow-up into repeatable workflows.
- Negotiated claim scope and valuation with insurers using policy analysis, estimates, evidence packages, and appraisal demands.

Smart Contract Engineer, Index Cooperative — Remote 2022 – 2024

- Implemented TypeScript and Solidity software for production DeFi products and EVM integrations.
- Connected wallets, RPCs, token data, and contracts to transaction flows; implemented Merkle tree distributions.
- Isolated transaction failures across RPC responses, contract state, asynchronous execution, and frontend synchronization.
- Automated tests and organized typed components and state flows for maintainability.

Smart Contract Engineer, YAM Finance — Remote 2021 – 2022

- Implemented Solidity contracts and TypeScript applications for DeFi products.
- Wrote EVM tooling for governance systems, protocol contracts, token balances, and transaction data.
- Isolated wallet, transaction, contract-integration, and application-state defects for remediation.

Owner and Operations Manager, WaterMate — Charlotte, North Carolina 2018 – 2022

- Scaled a restoration company to a five-person team generating more than \$700,000 in revenue.
- Digitized intake through invoicing; introduced Matterport 3D imaging and Xactimate to scope and estimate losses.

Security Engineer, Apex Systems — Contractor to Wells Fargo 2018 – 2021

- Integrated ReversingLabs into the Wells Fargo corporate environment to expand enterprise malware analysis.
- Resolved cross-platform integration failures with security, infrastructure, and vendor teams; validated behavior and data flows.

Security Engineer, SIXGEN — Contract 2018

- Prioritized system and application security risks for remediation.
- Validated security controls, analyzed vulnerabilities, and troubleshooted system and application issues.

Continuous Integration Test Developer, CyberPoint International 2017

- Automated unit tests in Python and SCons from submitted bug reports.
- Converted reproduced defects into CI regression tests and validated fixes with developers.

Full Stack Engineer and Product Lead / Cyber Instructor, Chiron Technology Services 2014 – 2016

- Drove cybersecurity training application delivery with Docker, Django, Celery, Redis, and RabbitMQ.
- Scripted deployment of more than 3,000 concurrent virtual machines for hands-on cyber training.
- Delivered more than 4,000 instruction hours to classes averaging 18 students in networking, operating-system design, and mobile and embedded devices.

Security Analyst, NetSage, Inc. — Contractor to IRS

2013 – 2014

- Detected threats in live enterprise traffic and tuned antivirus and firewall rules for the IRS 24/7 incident response team.
- Reverse-engineered JavaScript, PDF, Windows executable, and ELF malware; investigated lost IT assets and sensitive-data exposure.

Cryptologic Technician Networks / CNO Operator Advanced, United States Navy /

2010 – 2014

National Security Agency

- Executed authorized cyber operations during Navy service, including an NSA CNO Operator Advanced assignment (2011 – 2013).
- Triaged network defenses and malware, emulated cyber threats, and analyzed network/system data for investigations.

PROJECTS

Avow Savings and Insurance Platform — Independent Product Engineering Project

2025 – Present

- Architected a savings and insurance platform linking membership benefits to yield from overcollateralized DeFi lending.
- Integrated Aave V3 on Base for USDC deposits, withdrawals, yield, balances, and application-level APY calculations.
- Implemented reusable, type-safe Nuxt/Vue 3 flows with TypeScript, TanStack Vue Query, Tailwind CSS, and UnoCSS.
- Created administrative CLI tools and automated Vitest/Playwright tests for review, approval, wallet, and membership workflows.

Infrastructure Engineering and Automation — Independent Systems Project

- Operated Ubuntu with native Plex and Docker/Docker Compose services; routed downloads through a selective VPN.
- Automated service workflows while configuring storage, permissions, container volumes, DNS, networking, and remote access.
- Scripted log, connection, CPU, disk I/O, and container evidence collection to diagnose failures; added monitoring and notifications.

TECHNOLOGIES

Languages: TypeScript, JavaScript, Python, Solidity, SQL, Bash, PHP, C, C++

Frameworks & Libraries: Vue 3, Nuxt, TanStack Vue Query, Django, Django REST Framework, Flask, Laravel, Tailwind CSS, UnoCSS

Data & Messaging: Supabase, PostgreSQL, MySQL/MariaDB, Redis, RabbitMQ, Celery

Platforms & Tools: Ubuntu, Linux, Docker, Docker Compose, VMware, Nginx, Apache, IIS, Webpack, Git, Plex, Matterport, Xactimate

Blockchain: Ethereum, EVM, Base, Aave V3, Wagmi, Viem

Testing: SCons, Vitest, Playwright

Security: ReversingLabs, NetWitness, Snort, Wireshark, tcpdump

SKILLS

Security: application security, secure SDLC, threat modeling, vulnerability analysis, incident response, malware analysis, API security, IAM

Engineering Quality: CI/CD, unit testing, regression testing, integration testing, root-cause analysis

Infrastructure: network routing, VPNs, virtualization, service monitoring, container networking and observability

EDUCATION

Computer Science coursework, University of Maryland University College (degree not completed)

Full-Stack Engineer Program, Udacity