

Emilio Sánchez-Harris

Software engineer who builds grounded, tested AI systems and ships them to real users.

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PROJECTS

Prospect Brief source-cited donor research and SEC signal watch · Sole engineer · github.com/esanchezharris/prospect-brief 2026

- Name in, two-page brief out: every factual sentence carries a numbered footnote to a cached public source with the verbatim supporting quote on hover. Public sources only; never estimates net worth or giving capacity.
- Verification runs in code: each quote must be found in the cached page, every number and name in a claim must appear in its quote, a second model checks entailment, identity anchors exclude namesakes, conflicts show side by side.
- Signal watch scans SEC full-text search for filings mentioning an institution and extracts executive bios with money events (IPO registrations, board and officer appointments).
- 63 tests on a fictional fixture corpus with planted traps (fake quotes, wrong numbers, namesakes, injected instructions, blocked domains); an eval command reports recall against known facts and exports a 25-claim precision audit.

Mosh AI-native digital audio workstation · Sole engineer 2026

github.com/esanchezharris/Mosh · public v0.1.1, signed and notarized macOS Apple Silicon build

- Built a cross-platform DAW solo: C++/JUCE 8 + Tracktion audio engine, React/TypeScript WebView UI, and a Python/MLX generative service (Stable Audio 3) for import, arrange, VST3/AU hosting, mix, and export.
- Designed MoshOps, a single validated, undoable command layer, so the human UI, LLM agents, and the Moshi voice agent change session state the same way: every agent action is checked and reversible.
- Ran requirements interviews with working producers, shipped guest builds to outside testers with onboarding docs, and folded their feedback into releases.
- 1,000+ packaged self-tests plus Catch2, Vitest, Playwright, and GitHub Actions CI; generative “re-imagine” controls; two-player multiplayer over a Supabase-backed relay.

AskManny local RAG for audio engineering · Solo 2025

github.com/esanchezharris/AskManny

- Indexed 1,678 hours / 3,910 mixing interviews into 99K chunks (sentence-transformers + ChromaDB); grounded answers with timestamped citations via Mistral-7B on Ollama, backed by retrieval tests.

Irresistible prompt-to-quote CPQ slice · Solo 2026

irresistible-demo.vercel.app · github.com/esanchezharris/Irresistible · live, model-backed

- Agentic CPQ vertical slice: OpenAI Structured Outputs to a typed DealSpec; deterministic TypeScript pricing in integer cents; parallel approval routing with human sign-off before a quote ships. 13 golden tests; ~0.01 ms p99 on the price-and-route kernel.

Earlier ML projects PyTorch, CUDA 2024 – 2025

- Generative Spherical Orbifold: Escher-style tiled spheres from text prompts via spherical Tutte embeddings and score-distillation sampling; ported the L-BFGS solver from MATLAB to PyTorch with CUDA. github.com/esanchezharris/GenerativeSphericalOrbifold
- CRNN CAPTCHA Breaker: CNN + BiLSTM + CTC model to 88% full-CAPTCHA and 98.6% character-level accuracy on 10K images; documented failure modes to inform stronger CAPTCHA design. github.com/esanchezharris/CaptchaBreaker

EXPERIENCE

Independent Music Producer & Performer creative practice 2016 – 2024

- Wrote, arranged, mixed, and released music daily in Ableton and FL Studio: a working user’s sense of latency, workflow friction, and what creators need from tools.

TEDx Licensed Organizer & Event President 2018

- Licensed and ran a TEDx event end to end: speaker programming, operations, and stakeholder coordination.

EDUCATION

Northeastern University — graduate coursework in Computer Science (AI/ML focus) 2024 – 2026

Loyola University New Orleans — B.A. Urban & Electronic Music Production 2020 – 2023

SKILLS & CERTIFICATIONS

AI / ML: Python, PyTorch, CUDA, MLX, Stable Audio, LLM agents and tool use, structured outputs, RAG (sentence-transformers, ChromaDB, Ollama), evaluation harnesses, grounding and hallucination tests, human-in-the-loop design

Systems & audio: C++, JUCE 8, Tracktion Engine, real-time audio, VST3/AU, CMake, multi-platform builds

Product & web: TypeScript, React, Vite, Node, Playwright, Vitest, GitHub Actions, Supabase, SQL (Postgres)

Learning: Microsoft Copilot Studio and Power Automate, Salesforce platform **Certifications:** CompTIA A+