

Emilio Sánchez-Harris

Software engineer building AI-native products end to end. Creator of **Mosh**, an agent-driven cross-platform DAW.

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BUILT & SHIPPED

Mosh — AI-native digital audio workstation · Creator & sole engineer 2026
github.com/esanchezharris/Mosh · **public v0.1.1 release, signed and notarized macOS build**

- Built a production-grade cross-platform DAW solo, with a C++ / JUCE 8 audio core on Trackson Engine, a React + TypeScript UI, and a Python/MLX generative service running Stable Audio 3. Covers recording, arrangement, VST3/AU hosting, mixing, and export on Apple Silicon and on Windows with CUDA.
- Architected **MoshOps**, an agent-native command layer where every state mutation flows through a single validated, undoable, audit-logged path. LLM agents, the Moshi voice agent, and the human UI execute the exact same commands.
- Ships with 1,000+ deterministic self-test checks in the packaged app, unit and Playwright e2e suites, staged release gates, and CI. A Windows + CUDA port passed the full native, packaging, and e2e gates on hardware.
- Designed the generative re-imagine flow end to end, from semantic controls in the UI to the MLX model service, with graceful degradation when models are absent.
- Shipped guest builds to external playtesters with onboarding docs, and built two-player multiplayer sessions over a Supabase-backed relay.

Irresistible — prompt-to-quote transaction slice · Solo 2026
irresistible-demo.vercel.app · github.com/esanchezharris/Irresistible · **live, model-backed**

- Weekend-built CPQ vertical slice. OpenAI Structured Outputs compile a sales request into a strictly typed DealSpec. Deterministic TypeScript then prices graduated tiers and multi-year ramps in integer cents, routes a parallel approval DAG, and re-validates every proactive alternative.
- Passes 13 golden tests, holds 0.01 ms p99 on the local price-and-route kernel with model latency reported separately, and emits typed replay events with stable digests.

AskManny — RAG Q&A for audio engineering · Solo 2025
github.com/esanchezharris/AskManny

- Local end-to-end RAG pipeline over 1,678 hours of professional mixing-engineer interviews. Indexes 3,910 videos into 99K chunks with sentence-transformers embeddings, retrieves with ChromaDB, and answers with Mistral-7B through Ollama at zero API cost.
- Every answer returns timestamped citations to the original interview. Test utilities verify retrieval quality, attribution, and link formatting.

Generative Spherical Orbifold · with Nikhil Trivedi, advised by Dr. Crane Chen 2024
github.com/esanchezharris/GenerativeSphericalOrbifold

- Generated Escher-style tiled spheres from text prompts across two research codebases (spherical Tutte embeddings, score-distillation sampling), and ported the core L-BFGS solver from MATLAB to PyTorch with CUDA.

CRNN CAPTCHA Breaker · Solo 2025
github.com/esanchezharris/CaptchaBreaker

- Trained a CNN + BiLSTM + CTC sequence model in PyTorch to 88% full-CAPTCHA and 98.6% character-level accuracy on 10K images, and documented failure modes to inform stronger CAPTCHA design.

EDUCATION

Northeastern University — M.S. Computer Science (Silicon Valley campus) 2024 – present

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

SKILLS

Systems & audio	C++ (JUCE 8, Trackson Engine), real-time audio, VST3/AU hosting, CMake, multi-platform builds
AI / ML	PyTorch, CUDA, MLX, Stable Audio, LLM agents & tool design, eval/verification harnesses, RAG (sentence-transformers, ChromaDB, Ollama)
Product & web	TypeScript, React, Vite, Node, Playwright, Vitest, GitHub Actions, Supabase, Python
Music	Production and mixing in Ableton Live and FL Studio, piano, guitar

Beyond code: licensed TEDx organizer & event president · National Hispanic Recognition Scholar.