

Dhairya Vashist

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AI / Agentic Systems Builder — Applied Math & CS @ UCSD

EDUCATION

University of California, San Diego

B.S. in Mathematics-Computer Science

La Jolla, CA

Aug. 2025 – May 2029

AI & AGENTIC PROJECTS

paper-to-code | *Agentic Research-to-Code Pipeline, Claude Code Skill, Python*

- Built a 12-phase agentic skill that autonomously turns a research paper into a verified, citation-anchored implementation: parsing → algorithm extraction → prior-art search → code generation → a fidelity-verification gate → extension research → demo
- Designed an MCP-style tool/skill architecture with a retrieval step that grounds implementation decisions in prior-art code, plus an ambiguity-audit stage that flags every underspecified detail before code is written
- Engineered the fidelity gate to check generated code against a literal transcription of the paper's own equations on a fixed seed, catching "correctly-shaped, wrong-math" failures that shape tests miss

Clipchain | *AI-Scored Video Bounty Platform on Solana, Next.js, TypeScript, Node.js*

- **Won Best Use of Solana at DiamondHacks 2026.** Built an end-to-end pipeline where Twelve Labs video indexing and Google Gemini scene analysis jointly generate a rarity score for user-submitted clips
- Tied the AI rarity score to an on-chain quadratic bounty payout, settled instantly in SOL via Solana Wallet Adapter (Phantom/Solflare) integration
- Built the Next.js/TypeScript frontend and Node/Express backend, with Vultr object storage for clip ingestion

Offline-First Health Screening System | *Real-World Deployed, PHP, MySQL, Gemma*

- Designed a conflict-free, station-based sync architecture (one database row per station) so 5–6 doctors can record data concurrently on offline-capable devices with no locking or merge logic — deployed at real school health camps
- Built an LLM report-generation layer using Gemma, combining structured clinical intake data with voice input to produce personalized, plain-language health summaries for students and parents
- Load-tested to 10,000 students (86,000 section writes): 1.3ms p95 section save, 31ms p95 sync poll, on commodity shared hosting

RESEARCH

Security Research — email2sms-repro

Summer 2026

Independent Summer Research Project

Python

- Produced an executable reproduction of "Lost in Translation: Text Message Spoofing via Email" (IEEE S&P / Oakland 2026), encoding the paper's core findings as 59 passing automated tests
- Built three defensive extensions beyond the paper: a spoofed-message detector (100% recall on the reproduced attack suite), a gateway-hardening linter with a SafeGateway policy, and a parser fuzzer that found and patched every parser-vulnerability class the paper identified
- Shipped a gated, authorization-only live-testing module and an interactive demo to responsibly illustrate the vulnerability without enabling misuse

EXPERIENCE

Freelance Developer

Remote

Self-Employed

2021 – 2024

- Built and deployed responsive web apps (MERN stack) for small-business clients, including task trackers, portfolio dashboards, and analytics portals, owning the full project lifecycle from requirements to deployment

Tech Intern & On-Site Volunteer

New Delhi, India

HuHaHo (HumanHappinessHope)

Summer 2023

- Digitized wellness-program sign-up and feedback systems, cutting manual entry time by 40% and improving participant engagement by 30% across 700+ attendees

TECHNICAL SKILLS

AI / Agentic: LLM integration (Gemini, Gemma), agentic coding (Claude Code skills), MCP-based tool orchestration, retrieval-augmented / prior-art grounding pipelines, prompt engineering, video intelligence (Twelve Labs)

Blockchain: Solana, Wallet Adapter (Phantom/Solflare), on-chain transaction settlement

Languages: Python, JavaScript, TypeScript, Java, SQL, PHP

Frameworks & Tools: React, Next.js, Node.js, Express, Flask, FastAPI, Git, Vultr Object Storage, MySQL

ACHIEVEMENTS

Best Use of Solana — DiamondHacks 2026

Winner — DigiKey Track, 2026

Hard Hack 2026 — IEEE Regional

ENpower BTS Hackathon — National