Matthew Sullivan

Full Stack Engineer · Backend, Mobile & Cloud Infrastructure

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SUMMARY

Full-stack developer who started out in embedded systems and manufacturing software. At EHMA.ai I own wAve, an AI-powered solar sales platform handling about $250K in sales a week, with one other engineer. In 13 weeks we replaced a 14-person outsourced team and took the platform to production-grade: 400+ commits, 850% more test coverage, a live CPU crisis fixed the same day, a zero-downtime database migration, and a full PII security overhaul. Platform revenue is up 57% this year. I ship monitoring and documentation with every feature so the next engineer can pick up the work. Outside work I build free, open-source accessibility tools: Sprout AAC, a communication app for kids, and ClearPath, a browser extension that makes websites easier to read.

EXPERIENCE

EHMA.ai (Suntria / wAve) *January 2026 – Present*

Full Stack Engineer — Tempe, AZ · On-site

- With one other engineer, owned and maintained a platform processing ~$250K in solar sales weekly (~$13M+ annually) — replaced a 14-person outsourced team and took it from no tests, no monitoring, and silent failures to production-grade in 13 weeks (400+ commits, 94+ Linear issues closed).
- Platform revenue grew 57% year to date, driven in part by the performance, reliability, and feature work shipped during this period.
- Grew total test coverage from ~393 to ~5,605 tests across backend (850% increase), mobile (~1,590 tests across 199 files), and HR portal — all gated in CI/CD pipelines.
- Resolved a live CPU crisis same-day: reduced API P50 from 18,000ms to 316ms, polygon queries from 33s to 279ms (100x improvement), failure rate from 34% to 0%.
- Zero-downtime migration of 556K leads and 1,550 users from MongoDB Atlas to Azure Cosmos DB vCore; separate 96M-record parcels collection with optimized indexes.
- Stood up Azure API Management as the platform gateway with Event Hub streaming — centralized rate limiting, CORS, auth validation, audit logging, and event-driven deal processing.
- Built CI/CD gated pipelines across 4 repos (backend, frontend, mobile, HR portal) including a self-hosted iOS build agent with automated TestFlight and App Store delivery.
- Led full PII security overhaul: Key Vault envelope encryption (AES-256/RSA-2048), PBKDF2 at 600K iterations, CORS lockdown, HMAC-SHA256 webhook verification, XSS sanitization — zero plaintext sensitive data remaining.
- Migrated electronic signature platform from DocuSign to Box Sign — 36 IA templates across 9 states, 2 languages, and multiple financiers — saving ~$21,000–$33,000 annually at zero incremental cost. 4,083 passing tests, HMAC-SHA256 webhook verification, forward-only state machine for idempotent webhook processing.
- Built wAve Bot across 5 Azure Function Apps and 6 Slack channels: health monitoring, sales reporting, user analytics, deploy notifications, post-deploy smoke tests, auto bug investigation, and weekly query profile automation.
- Built a persistent Claude Code memory system — 87 files, ~5,025 lines including 39 feedback rules, 27-collection database schema, and full project history — compounding team effectiveness every week.
- Complete HR Portal redesign (dashboard, split-view panel, notification center, export system, SLA tracking, SVG charts) plus full Everpower rebrand.
- Integrated NetSuite (SuiteQL + REST), GoodLeap (55+ endpoints, full TPO flow), EnFin (change orders), Checkr (auto-advance background checks), Box Sign, JIRA, Aurora Solar, and Twilio SMS.

Sprout AAC *December 2025 – Present*

Founder & Lead Developer — Remote · Part-time

- Building a free, open-source AAC app for children who communicate differently — a free alternative to commercial solutions costing $149–$249/year.
- Architecting a cross-platform Flutter application targeting iOS and Android, licensed under GPL v3 to keep it free permanently.
- Managing all aspects: product roadmap, GitHub org, issue templates, contribution guidelines, and public-facing website at sproutaac.org.

- Companion project: ClearPath, an open-source browser extension for web accessibility featuring text simplification, read-aloud, and AAC symbol overlays.

Stack: *Flutter, Dart, iOS, Android, Cloudflare Pages, D1, TypeScript, React, Vite*

Ciena *January 2023 – September 2025*

SQA Developer — Remote

Official title: Embedded Software Engineer I — role was primarily SQA development.

- Joined during Ciena's acquisition of TiBiT Communications — maintained embedded systems and manufacturing software through the integration period.
- Led knowledge transfer of TiBiT's manufacturing station hardware and software architecture for Ciena engineering teams; created technical documentation adopted org-wide.
- Built and maintained test infrastructure for TiBiT/Ciena networking products — traffic distribution, loss prevention, and load balancing.
- Led migration from JIRA to TestRail for test execution tracking — owned reporting across multiple environments and products.
- Responsible for installation, upgrade, and downgrade testing across 5 TiBiT/Ciena software products.
- Supported Salesforce integration during post-acquisition enterprise systems consolidation.

TiBiT Communications *October 2021 – January 2023*

Manufacturing Software Engineer — Remote

- Developed and maintained the branding station for TiBiT MicroPlug OLTs and ONUs — reads purchase order requirements and writes customer branding directly to device flash over UART and I2C.
- Identified a production throughput bottleneck on my own initiative and solved it: rewrote the branding station from C to Python and added 16-port board support — increasing station throughput 16x with no direction to do so.
- Assisted in debugging firmware issues in the MicroPlug software itself — working at the intersection of embedded software and hardware.
- Built and maintained Salesforce Lightning components for both internal and external use — custom sales dashboards for internal teams and improvements to the customer-facing portal used for firmware downloads.
- Wrote SOQL and Python scripts to integrate Salesforce data with TiBiT's manufacturing applications and internal tooling.
- Built a network statistics web interface that ships as part of the TiBiT/Ciena PonManager product — displays traffic data numerically and graphically with filtering by timeframe and deployment location.
- Helped ship thousands of OLTs and ONUs to customers worldwide across a company of ~50–60 people.

TECHNICAL SKILLS

Languages: C#, Python, TypeScript, JavaScript, Swift/SwiftUI, Dart, C/C++, APEX, SQL/SOQL, HTML/CSS

Backend: .NET 8 / ASP.NET Web API, Hono, Django, Node.js — clean architecture, domain services, event-driven patterns

Frontend: React, Astro, Vite, Tailwind CSS, Zustand, React Query, TanStack Table, Framer Motion, Angular, Flutter

Mobile: Swift/SwiftUI, SPM modular architecture, XCTest, self-hosted iOS CI/CD (Mac Mini build agent), App Store Connect, TestFlight

Cloud & Infrastructure: Microsoft Azure: App Services, Functions (5 apps), Cosmos DB vCore, Key Vault, APIM, Event Hub, Service Bus, Blob Storage, App Insights, Azure DevOps — also AWS, Cloudflare Workers/Pages

Databases: Azure Cosmos DB vCore, MongoDB, SQL, SQLite (D1/Prisma), SOQL — query optimization, index strategy, large-scale zero-downtime migrations

DevOps & CI/CD: Azure DevOps, GitHub Actions, parallel E2E sharding (Playwright), self-hosted build agents, TestFlight automation, codemagic-cli-tools

Security: Azure Key Vault envelope encryption (AES-256/RSA-2048), PBKDF2 (600K iterations), HMAC-SHA256 webhook verification, CORS hardening, XSS/ReDoS prevention, managed identities

Observability & Monitoring: Application Insights (KQL), structured logging (ILogger across all controllers), platform telemetry, Slack Bot notifications (14 functions), post-deploy smoke tests, weekly query profiles

Testing & QA: Playwright, Vitest, XCTest, PyTest, JUnit, Postman, TestRail, Wireshark — unit, integration, and E2E across backend, frontend, and mobile

Third-Party Integrations: NetSuite (SuiteQL + REST), Box Sign (JWT + webhooks), DocuSign, GoodLeap (55+ API endpoints), EnFin, Checkr, Twilio, JIRA, Aurora Solar, Slack Block Kit, Marker.io

Hardware & Embedded: FPGA, UART, I2C, RTOS, Embedded Linux

AI Tooling: Claude / Claude Code (persistent memory systems), GitHub Copilot, prompt engineering

EDUCATION

Arizona State University — Polytechnic Campus
Bachelor of Science in Software Engineering

- 3.8 GPA · High Honors · Honor Roll

PROJECTS

Redacted Records — theredactedrecords.com *Client project · October 2026*

Designed, built, and launched a booking and portfolio site for a Phoenix mixing and mastering engineer, from client brief to live custom domain. Persistent cross-page audio player with precomputed waveform and loudness data driving audio-reactive visuals; per-track share pages with generated link-preview images; D1-backed play counts; serverless booking pipeline with branded HTML email, sender auto-replies, and per-IP rate limiting; push-to-deploy CI/CD.

Stack: *Astro, TypeScript, Cloudflare Workers, D1, Resend, GitHub Actions*

ClearPath — clearpathext.com *Open source · Chrome extension*

Free, open-source Manifest V3 extension that makes any website easier to read: read-aloud with word highlighting, Reading Mode (Readability, OpenDyslexic, four themes), ARASAAC symbol overlays for AAC users, focus tools, offline definitions from a bundled 21,881-entry dictionary, and shareable settings profiles. Text simplification runs through the user's own OpenAI, Anthropic, or local Ollama key, sent directly from the browser with no ClearPath server. 453 unit tests and a code-level WCAG 2.1 AA audit; brand, docs site, and logo designed alongside.

Stack: *TypeScript, React, Vite, CRXJS, Web Speech API, Vitest, Astro (site), Cloudflare Pages*

Personal Portfolio — matthewsullivan.dev

Full-stack portfolio built as a pnpm monorepo. Features liquid glass UI, 3D tilt cards with gyroscope integration, command palette, Ring Runner game with persistent leaderboard, dynamic OG image generation via satori/resvg WASM, and JWT-protected admin panel.

Stack: *React, Vite, TypeScript, Hono, Cloudflare Workers, D1, Tailwind v4, Framer Motion*