

Eamon White

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Software engineer with nearly two decades of industry experience, spanning real-time embedded software, device drivers, and FPGA digital design through to production AI agent systems. Most recently building and deploying event-driven agents and MCP (Model Context Protocol) infrastructure for an enterprise AI platform, from first prototype to on-call production service. Extensive experience developing and providing multi-year support for hardware and software components backing mission-critical systems with hard real-time performance and reliability requirements. Comfortable as a solo engineer, technical lead, or embedded in a client team, and across the stack from custom PCBs and firmware up to cloud infrastructure.

TECHNICAL SKILLS

AI and agents: MCP servers and clients, agent frameworks (Bobi, LangGraph), LLM-judged evaluation, Claude Code, PyTorch, Transformers

Cloud and infrastructure: Kubernetes/GKE, Docker, Terraform, Cloudflare Workers, GitHub Actions CI/CD, OpenTelemetry, Grafana

Embedded and hardware: Zephyr, FreeRTOS, nRF52840, ESP32, Thread/802.15.4, LoRa, KiCad PCB design, VHDL on Xilinx FPGAs

Languages: Python, C/C++, JavaScript; earlier work in C#, Java, and LabVIEW

Web and data: React, Node, PostgreSQL, Redis/Valkey, MongoDB

WORK EXPERIENCE

Moda Labs, Remote — *Senior Software Engineer*

September 2025 - Present

- Re-platformed Barndoor AI's Tier-1 SRE on-call agent from a bespoke Go service onto Moda's open-source Bobi agent framework and took it from laptop prototype to production on GKE. The agent consumes the production alert queue, investigates read-only through policy-enforced MCP tools (Grafana, Kubernetes, CloudNativePG, ArgoCD), posts evidence-cited triage to Slack, acknowledges and resolves Grafana OnCall alert groups, and files or links Jira tickets. Designed as two roles: a director that owns all human communication and escalation, and an investigator that cannot speak to humans.
- Owned the deployment path: container image and Kubernetes manifests, a supervisor sidecar with out-of-band incident alerting, Terraform for the Cloudflare Workers event server, Kargo digest-based promotions, and OpenTelemetry metrics into Grafana Cloud. Diagnosed and fixed the production issues that came with it, including frozen promotions, OOM kills, and auth tokens lost across pod rolls.
- Primary contributor to Barndoor's MCP connector factory and tool router. Built the tool metadata system (CRUD classification, risk levels, per-plan gating with runtime enforcement), upstream drift detection with quarantine, a Redis/Valkey tool cache, and the v3 router with inline schemas and toolset version history. Onboarded dozens of SaaS connectors (Google, Microsoft, Salesforce, Stripe, and others) and brought the router test suite from 112 failures to green and enforced in CI.
- Built the initial agent evaluation framework (LLM-judged runs against live environments) and a standalone admin MCP server for debugging the platform from Claude Code. Contributed to the open-source Bobi framework: shipped the Discord channel and filed a dozen root-caused upstream issues.

Career Break, Berkeley CA — *Independent Projects*

October 2023 - September 2025

- Time off between roles, with independent embedded and wireless projects, including LoRa peer-to-peer networking on ESP32 and SX1262 hardware that became the open-source LoRaPeerLink library (see Other Projects).

Skyloom Global Corp, Oakland CA — *Senior Software Engineer*

October 2019 - October 2023

- Developed a multi-stage control algorithm to simulate optical receivers for geostationary satellites. A Windows Python application drove benchtop instruments over Ethernet, VISA/serial, and USB while tracking an incoming laser link with OpenCV, and demonstrated that the laser source could be stabilized with sufficient precision for fiber injection.
- Wrote bare-metal firmware on an ARM Cortex-M7 for the tracking and pointing subsystem prototype of the optical terminal. Demonstrated the performance limits of multiple steering mirrors and a four-quadrant detector in open- and closed-loop control; the results became inputs to the error budget of the overall system.

- Software and hardware lead for the prototype test campaign at the U.S. Naval Research Laboratory. Took prototype terminals through multiple week-long on-site interoperability tests against research lab, partner, and competitor hardware, proving compliance with the laser communication protocol and contributing directly to Skyloom's success in the Space Development Agency program.
- Oversaw hardware bring-up and release of an optical terminal emulator for customer system test, including design reviews, test criteria, and coordination with remote hardware and software teams. Automated the majority of software testing and managed the test-and-fix phase through product release.
- Managed the GSE (ground support equipment) group: identified pain points in development and manufacturing and delivered PCB, software, and mechanical projects that improved testing and product quality with limited resources.

Self Employed, Austin TX — *Independent Consultant*

May 2018 - September 2019

- System architect and lead application programmer for Linux-based point-of-sale devices: a Python application backed by MongoDB, with an Electron user interface, camera events, and hardware peripherals and sensors to verify identity, monitor device status, and process cash and card payments.
- Wrote microcontroller firmware for solar-powered rooftop fans, interfacing with external sensors on a cost-optimized low-power chipset.

National Instruments, Austin TX — *Senior Software Engineer*

August 2007 - May 2018

- Wrote C++ drivers and PicoBlaze (KCPSM3) firmware for real-time operating systems, minimizing jitter while maintaining consistent data IO across a wide array of plug-and-play measurement devices, including hardware changes at runtime.
- Implemented an anti-counterfeiting protocol in VHDL against an Atmel security chip: SHA-256 written from scratch, a pseudo-random number generator for a low-entropy system, and a one-wire interface, in a very small design that safeguards secret keys during manufacturing.
- Designed and built the “wizard” desktop application for the company's first system-on-module product, letting customers instantiate serial and SPI peripherals in FPGA fabric, constrain IO pins, and generate a LabVIEW interface without HDL expertise. Presented it at the NIWeek 2014 conference.
- Technical lead on a VHDL solution for synchronized and multi-sample FPGA applications, balancing the end user's desire for flexibility against fabric space and timing constraints.
- Also: research into Xilinx Partial Reconfiguration, a C#/Silverlight firmware update application served from an embedded web server, and a Python tool unifying a decade of legacy test reports in MongoDB and MySQL.

OTHER PROJECTS

Case studies with measurements, photos and source code are at 3amon.net.

Thread Mesh LED Wearables — *leaderless synchronized light network*

39 battery-powered wearable LED nodes (nRF52840, Zephyr, OpenThread) that keep their patterns in sync with no master or elected leader. Carrier PCB in KiCad, printed enclosures, signed over-the-air updates with rollback, and a simulator and bench harness that gate every release.

RFID Thread Scanner System — *wireless scanning network with live dashboard*

nRF52840 scanners on a Thread mesh reporting to Raspberry Pi border routers that act as equal peers, replay missed scans and update themselves. About nine days per charge. A countertop check-in kiosk grew out of it.

LoRaPeerLink — *open-source LoRa peer-to-peer library (github.com/3amon/LoRaPeerLink)*

C++ library for direct device-to-device LoRa links without LoRaWAN: acknowledged delivery with backoff, discovery by name, AES-128 with HMAC. Simulated-channel tests, verified on SX1262 hardware.

Agent tooling — *Termwall, agent guard rails, Faber*

A hotkey overlay for every coding-agent session across machines, fail-closed hooks that limit what an agent can touch, and an agent that designs parts as code and runs a 3D printer after sign-off.

EDUCATION

University of Texas, Austin TX — *B.S. Computer Science*

Graduated With Honors, Spring 2007 · Dean's Honored Graduate · Phi Kappa Phi