# THEO MAURINO

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## EDUCATION

**Northwestern University** — **Evanston, IL**
*BA Computer Science, Philosophy* | GPA 3.75 — *June 2026*
*MS Computer Science, Systems & Networking* | GPA 3.84 — *June 2026*

## EXPERIENCE

**HaptE**, resident of The Garage at Northwestern University
*Head Of Software Engineering* — *January 2026 – Present*

- Lead software engineering for an industrial IoT startup: the cloud platform, NVIDIA Jetson edge devices and a five-person team
- Driving the company's first enterprise warehouse deployment, setting the production roadmap, technical decisions and engineering priorities across the cloud platform, Jetson device software and edge gateway
- Built a production IoT analytics platform (TypeScript, Next.js, AWS via SST, Neon Postgres, Clerk) with real-time item-, transaction- and site-level dashboards over high-frequency industrial data for multiple client organizations
- Architected a real-time pipeline (AWS IoT → Lambda → WebSocket fan-out on DynamoDB), cutting dashboard update latency from ~60 s to under 0.5 s
- Scaling device-to-cloud communication to 1,000+ devices: modeled messaging, storage and AWS-quota load and cost to set the fleet architecture, and designing an exactly-once event pipeline (durable on-device outbox, idempotent ingest) for intermittent warehouse Wi-Fi
- Designed a Python edge gateway on NVIDIA Jetson that aggregates device data, runs fallback ML inference, isolates cloud access behind a secure network layer, and streams device video to the web platform via S3 + CloudFront
- Built the team's AI-assisted engineering workflow: a version-controlled knowledge base covering system architecture, per-repo internals, business operations, decisions and coding standards, packaged as Claude skills that agents read and keep current as work lands
- Led an end-to-end security audit of the platform and AWS infrastructure, fixing vulnerabilities across application and network layers. Set up CI/CD with automated tests, and structured logging and monitoring in CloudWatch

**Turbo AI** — **New York, NY**
*Software Engineer (Contract)* — *August 2026 – October 2026*

- Built an end-to-end customer feedback system: in-app reporting, a custom scheduled Claude agent and assorted tools, that checks each report against Linear tickets, an internal knowledge base, and the codebase (via the GitHub API) to deduplicate it, diagnose the root cause, and propose a fix, with personalized Postmark replies for non-bug feedback
- Built the admin dashboard for triaging and answering reports, letting support staff assign the agent issues reported elsewhere
- Rebuilt the podcast pipeline (~10K jobs/day), cutting failure rate from ~10% to under 0.1% at equal compute and throughput
- Built a Python A/B experiment-assignment pipeline that buckets new signups by target coverage and split, enforcing mutually exclusive tests and per-test limits, with permanent assignments that never collide or shift as tests expand
- Designed and rolled out a new secrets-sync system for all services and developer environments, migrating 700+ secrets, keys, and tokens and connecting dozens of services so rotations propagate instantly, replacing hand-maintained sync scripts
- Redesigned much of the lesson generation pipeline, fixing bugs that served missing or incorrect languages across 7M+ users
- Shipped 12+ production fixes spanning Stripe payments, UI, service uptime, and data leaks, affecting the full 7M+ user base

**Locket Cybersecurity**, resident of The Garage at Northwestern University
*Co-Founder, Chief Technology Officer, Cohort lead* — *January 2024 – March 2026*

- Co-founded cybersecurity education/consulting startup; trained and certified 30+ students
- Led teams of trained students in a cybersecurity posture analyses, securing and advising local businesses
- Built and secured locketcyber.com, integrating React.js, Next.js, TailwindCSS, Python, and AWS
- Led a workshop in SWE security for participants of Wildhacks, one of Chicago's largest hackathons

## FREELANCE AND RESEARCH

**Freelance Software Engineering**

- Delivered full-stack tools, payment systems, and more using TypeScript, Next.js, Python, Cloud and AWS. View selected projects here.

**Research**

- **Passive Fingerprinting:** Built a Selenium crawler, run on AWS EC2, that captured network traffic, cookies, assets and page source from ~12k domains sampled from top 10M sites. Labeled sites with active probes (DNS, build-directory and re-fetch checks), then trained a calibrated gradient-boosted classifier to identify JAMstack backends from passive signals alone, achieving >90% accuracy.
- **Video Compression:** Developed system analyzing perceptual degradation of YouTube uploads using ffmpeg, VMAF, and websocket tooling, correlating quality loss with encoding methods, popularity metrics, and content features

## TECHNICAL SKILLS

**Languages:** TypeScript, JavaScript, Python, Java, C/C++, SQL, Bash
**Frameworks & Tools:** React, Next.js, Node.js, TailwindCSS, Git, Docker, CI/CD, Stripe, Selenium
**Cloud & Data:** AWS (Lambda, API Gateway, DynamoDB, S3, CloudFront, RDS, IAM, CloudWatch), SST, Cloudflare, Supabase, PostgreSQL, MySQL
**Systems & Security:** Distributed, real-time and event-driven systems, WebSockets, TCP/IP, OAuth/JWT, secrets management, threat modeling