

TIM ILLGUTH

MLOps Engineer · ML Engineering · Linux Infrastructure at Fleet Scale

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PROFESSIONAL SUMMARY

MLOps and infrastructure engineer with 14 years delivering production systems in federal, regulated, and fleet-scale environments. At Bass Pro Shops, current work centers on local AI models and visual training workflows, combining hands-on ML engineering with the operational discipline required to make experiments repeatable, observable, and deployable. Earlier work there included package deployment, CVE remediation, and configuration management across approximately 4,400 Linux endpoints supporting nationwide PCI-DSS payment infrastructure. At NASA's Alaska Satellite Facility DAAC, designed a segmented enterprise network and migrated U.S. Coast Guard and DoD contractor systems without service interruption. Brings end-to-end ownership across ML workflows, Linux, automation, containers, networks, security, and production delivery.

CORE EXPERTISE

ML & MLOps: Local model training, visual/multimodal training workflows, dataset preparation, model evaluation, reproducible experimentation, Ollama, llama.cpp

Deployment: Fleet-scale orchestration, staged rollout and rollback, configuration enforcement, drift control, CVE remediation, SUSE Multi-Linux Manager, Puppet

Infrastructure: Linux (RHEL/SUSE/Ubuntu), Kubernetes, Docker, Helm, OpenStack, VMware, AWS

Engineering: Python, Bash, JavaScript/TypeScript, Solidity, C++; working familiarity with Go and Rust

Network & Security: Architecture, segmentation, Fortinet/ZTNA, BGP, OSPF, PCI-DSS, FISMA, NIST 800-53

AI Development: Anthropic Claude API, Claude Code, agentic workflows, evaluation-driven iteration, local open-weight inference

PROFESSIONAL EXPERIENCE

MLOps Engineer — ML Engineering · Bass Pro Shops Nov 2024 – Present

- Build and refine visual training workflows for locally hosted AI models, translating applied ML goals into repeatable engineering processes.
- Work across the ML lifecycle—from training-data preparation and experimentation through evaluation and operational integration.
- Apply production infrastructure practices to local-model development, emphasizing reproducibility, resource awareness, reliability, and measurable iteration.
- Bridge ML engineering and MLOps concerns so model improvements can move from experimentation toward dependable use.
- Previously owned package deployment, CVE patching, and configuration management across approximately 4,400 Linux endpoints: 182 proxy servers and 4,200+ point-of-sale systems.
- Operated SUSE Multi-Linux Manager for staged patch rollout, rollback, and configuration enforcement across live PCI-DSS payment infrastructure.

University of Alaska Fairbanks — Alaska Satellite Facility (NASA DAAC) 2012 – 2024

Network Administrator · Jr. Systems Administrator · Radar Technician · Infrastructure Student

- Designed and built the ASF Enterprise network for non-NASA contract workloads, including U.S. Coast Guard and DoD contractor systems; planned and executed migration from the NASA network to segmented infrastructure.
- Served as sole network administrator with end-to-end ownership of architecture, firewall policy, routing (BGP/OSPF), segmentation, troubleshooting, and physical infrastructure.
- Designed and deployed a Fortinet Zero-Trust Network Access VPN and advised DoD contractor network deployments.
- Supported petabyte-scale scientific data platforms across Linux, OpenStack, VMware, Kubernetes, Docker, AWS, and Puppet in a FISMA/NIST 800-53 environment.
- Administered compute nodes and AWS infrastructure used by resident researchers for machine-learning workloads.
- Returned for a one-year Canadian Space Agency RADARSAT Constellation Mission calibration engagement and created training that enabled independent execution of the remaining campaign.
- Performed synthetic-aperture radar calibration supporting JAXA ALOS-2 and NASA/JPL NISAR; designed and taught a C++ and robotics course through NASA STEM outreach.

Smart Contract Security Lead · SoQuCoin Foundation (Volunteer) Jan 2026 – Present

- Performed the initial smart-contract codebase security audit and continue contributing to a Layer 1 protocol implementing NIST FIPS 204 ML-DSA/CRYSTALS-Dilithium post-quantum signatures.

SELECTED ENGINEERING PROJECTS & WRITING

Automated Market Maker (Ethereum)

Constant-product Solidity AMM with invariant enforcement, slippage protection, edge-case test coverage, and React/Redux/ethers.js integration.

Patent NFT Marketplace

ERC-721 marketplace with IPFS metadata, multi-token payments, reentrancy protection, access control, and on-chain uniqueness; deployed to Sepolia.

DAO Governance System

OpenZeppelin-based governance with quadratic voting, multisig treasury, and crowdsale mechanics; reviewed using Slither, MythX, and manual analysis.

Technical Writing

Eight published articles on agentic coding, AI developer tooling, smart-contract security, concurrency, and gas optimization at timillguth.com/blog.

EDUCATION & CERTIFICATIONS

- **University of Alaska Fairbanks** — Electrical & Computer Engineering, mathematics minor; 135 credit hours. Transitioned to a full-time Alaska Satellite Facility role before degree completion.
- **Brigham Young University–Idaho** — B.S. Applied Technology coursework; currently on leave.
- **Certifications:** Linux Engineer (LPIC), Linux Professional Institute · Network Security Engineer Level 4 (NSE4), Fortinet · Juniper Network Engineer, Juniper Networks
- **Course certificates:** Blockchain Architect, 101 Blockchains · Blockchain Developer, Dapp University

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