# Jacob Hoehler

## Senior Software Engineer

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## Summary

Senior Software Engineer with six years of experience across backend systems, cloud infrastructure, and web application development. Owns features from design through production deployment on small, collaborative teams. Ships both customer-facing services and internal tools that teams actually want to use.

## Work Experience

### Waites · Remote
*Senior Software Engineer* · Jan 2025 – Jan 2026

- Architected IoT configuration API with FastAPI and Pydantic, replacing direct database access with a validated, documented interface designed around user workflows
- Developed unit and integration test suite for IoT configuration API to maximize code coverage and catch regressions before deployment
- Planned and validated migration of 1.2M IoT records, ensuring API compatibility for 2,000+ gateways without requiring firmware updates
- Extended production Terraform infrastructure for multi-region AWS deployment, adding VPC peering, Lambda networking, and region-specific configurations
- Redesigned Lambda-based config validation as a containerized ECS service to eliminate timeout failures during fleet-wide firmware deployments
- Streamlined infrastructure deployment signoff by developing reusable GitHub Actions workflows with PR-driven Terraform and CloudFormation changeset review
- Shipped internal MLflow platform during company hackathon, now used daily by ML team for experiment tracking
- Diagnosed and fixed SQS batch processing bug which was dropping 85% of messages through proper batch iteration and partial failure reporting
- Developed API comparison testing framework validating parity across 2,000+ gateway configurations, catching bugs during NodeJS-to-FastAPI migration

### Synthetik Applied Technologies · Remote
*R&D Engineer (Software)* · Jan 2022 – Jan 2025

- Improved object detection accuracy by generating thousands of synthetic images through a Blender pipeline
- Eliminated the need for manual labeling by automating ground truth annotation extraction from synthetic scenes
- Transformed simulation notebook into a parameterized CLI pipeline on AWS Batch through containerization and runtime configuration
- Cut cloud costs by 40% through AWS Spot Instances and VPC consolidation while meeting all project goals
- Automated migration of 300 repositories from Bitbucket to GitHub through custom scripting
- Automated Docker image builds and deployment with GitHub Actions and Azure IoT Edge for vehicle inspection devices
- Reduced device QA time by over 50% by enabling on-site engineers to independently execute quality control procedures
- Cut inventory management overhead by 90% through evaluation, deployment, and leading adoption of InvenTree

### University of Dayton Research Institute · Remote
*Junior Positioning, Navigation, and Timing (PNT) Engineer* · Mar 2020 – Jan 2022

- Led a three-person team developing Express.js REST API processing 20,000+ messages/minute with push-based architecture ensuring data routing continued during service outages
- Developed UDP multicast ingestion service capturing 300+ sensor messages per second for post-flight analysis
- Designed segmented VLAN architecture with shared and isolated network zones enabling secure data coordination among multiple flight test vendors

## Education

**University of Dayton**                                                              **Dayton, OH**
*Master of Science in Electro-Optics and Photonics*                        Aug 2018 – May 2020

**Rowan University**                                                               **Glassboro, NJ**
*Bachelor of Science in Physics*                                            Aug 2014 – May 2018

## Projects

**Homelab**
*Personal*                                                                    Aug 2024 – Present
- Orchestrated multi-node infrastructure with Ansible and Docker Compose to host containerized services across local servers
- Migrated select services to K3s Kubernetes with Flux GitOps for declarative configuration management
- Implemented VLAN segmentation across UniFi-managed network to isolate personal, server, and IoT traffic
- Configured automated cold storage backups to Backblaze B2, provisioned through Terraform
- Monitored infrastructure health and log aggregation with a Grafana, Prometheus, and Loki observability stack

**Resift**
*Personal*                                                                    Jan 2026 – Present
- Developed a four-stage ETL pipeline that generates highly tailored resumes by matching prior experience against job posting requirements
- Designed a Typer CLI with runtime configuration and stage-level progress reporting for each pipeline run
- Implemented semantic matching between professional experience and job requirements using ChromaDB vector search
- Integrated LLM-powered bullet rephrasing via Pydantic-AI with faithfulness validation to prevent AI hallucination in application materials
- Automated Typst PDF compilation with iterative content adjustment to fit target page layout constraints

**Packing Pal**
*Personal*                                                                    Dec 2025 – Present
- Developed a trip packing list generator with a conditional rules engine that evaluates season, purpose, travel mode, and duration
- Implemented a Django Ninja REST API with SvelteKit frontend for trip management and list editing
- Exposed 16 tools through FastMCP integration for natural language packing list generation via AI assistants

## Skills, Languages, Interests

- **Languages**: Python, JavaScript, SQL, PostgreSQL
- **Frameworks**: FastAPI, Pydantic, SQLModel, Typer, Node.js, Express.js, React
- **AWS**: Lambda, ECS, Batch, CDK, S3, Aurora, SQS, CloudWatch, CloudFormation
- **Infrastructure**: Docker, Terraform, Pulumi, Ansible, GitHub Actions
- **Observability**: OpenTelemetry, Pydantic Logfire, Grafana, Loki