

# ALEX MOYER

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## PROFESSIONAL SUMMARY

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IT Specialist focused on AI-assisted enterprise system development, legacy infrastructure modernization, and critical operations technology. Architected and delivered six production enterprise systems using large language models (Claude, GPT-5.2, Gemini) as force multipliers, achieving outcomes that would typically require dedicated development teams. Background spans operational technology (SCADA, industrial control systems, utility infrastructure), full-stack development, and AI/ML integration. Have transformed fragmented legacy systems into unified, intelligent platforms across power generation, water treatment, and municipal utility operations.

## CORE COMPETENCIES

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### Artificial Intelligence & Machine Learning

Large Language Model Integration (Anthropic Claude, OpenAI GPT-5.2, Google Gemini, xAI Grok) AI-Assisted Software Development & Prompt Engineering Retrieval-Augmented Generation (RAG) Systems & Vector Databases Machine Learning Document Analysis & Computer Vision Natural Language Processing

### Enterprise Systems & Infrastructure

SCADA/HMI System Architecture Industrial Control Systems IT/OT Convergence Critical Infrastructure Security Network Engineering (Fiber/CFOT, Wireless, Modbus TCP/RTU) VMware HA Clusters Docker Azure AD CI/CD Pipelines

### Software Development

TypeScript React Next.js Node.js Python NestJS Fastify PostgreSQL TimescaleDB SQL Server SQLite ChromaDB WebSocket EDR/XDR SIEM OT/ICS Security

## PROFESSIONAL EXPERIENCE

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### IT/OT Specialist

June 2021 – Present

40 hours/week

Nebraska City Utilities | Nebraska City, NE

*Supervisor: Stuart Abbott, Operations Manager*

Lead software development and AI initiatives for municipal utility serving power generation, water treatment, wastewater treatment, and natural gas distribution across 5 operational facilities. Primary architect for all enterprise application development, working alongside OT-focused senior technician and junior team member. Responsible for cybersecurity oversight, network infrastructure, and technical support operations.

### AI-Enabled Enterprise System Development:

- SCADA Command Platform:** Architected enterprise-grade SCADA HMI replacement using AI-assisted development (Claude, Cursor). Consolidated 20+ fragmented legacy HMI screens into unified web-based interface. Real-time industrial monitoring across all 5 facilities with 100% dynamic configuration. Tech: Next.js, NestJS, TimescaleDB, Modbus TCP/RTU, WebSocket.
- Municipal Outage Management Suite:** Designed real-time utility outage tracking and response coordination system, replacing manual phone-based coordination. Interactive GIS mapping, automated crew dispatch, customer communication integration. Tech: Next.js, PostgreSQL, Microsoft OAuth, Google Maps API.
- AI-Powered Document Processing:** Developed ML document analysis platform achieving 90% reduction in invoice processing time. Computer vision models for intelligent document classification and data extraction. Tech: Next.js, FastAPI, Ollama, llama3.2-vision.
- Fleet Management System:** Built vehicle lifecycle management platform replacing paper-based tracking. Condition reporting, maintenance scheduling, mobile-responsive field access. Tech: Node.js, Express, SQLite.
- Network Operations Center:** Developed centralized monitoring dashboard with browser-based SSH, multi-session management, enterprise device administration across distributed utility sites. Tech: Next.js, Fastify, WebSocket, SSH2.

- **Enterprise Deployment Platform:** Created multi-environment deployment CLI with automated server provisioning, real-time monitoring, integrated logging. Tech: TypeScript, React (Ink), Commander.js, Docker.

#### **Infrastructure & Security:**

- Manage cybersecurity posture across IT/OT environments; implement EDR/XDR, conduct security assessments, maintain utility sector compliance
- Administer hybrid network infrastructure: fiber optic backbone, wireless systems, industrial control networks
- Maintain VMware HA clusters supporting critical utility operations with 99.9% uptime requirements
- Provide Tier 1–3 technical support for 70+ employees across administrative and field operations

#### **Internet Service Technician**

2014 – June 2021

Spiral Communications / Pinpoint Communications | Nebraska

40 hours/week

Installed, maintained, and troubleshooted telecommunications infrastructure: fiber optic networks, wireless systems, and customer premises equipment. Served rural and municipal customers across Southeast Nebraska.

#### **Regulatory Compliance Technician**

2013 – 2014

Fuel Systems Service | Nebraska

40 hours/week

Conducted environmental compliance testing and documentation for underground fuel storage systems. Ensured regulatory adherence across multiple client sites throughout the region.

#### **Heavy Equipment Operator / Construction**

2009 – 2013

Various Employers | Nebraska

40 hours/week

Operated heavy machinery in quarry and construction environments. Learned equipment maintenance and problem-solving in high-stakes operational settings.

### **TECHNICAL PROJECTS (OPEN SOURCE)**

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**Retrieval-Augmented Generation System:** Vector-embedded database with 31,000+ documents, semantic search, multi-model AI integration (Gemini, Grok). Production RAG architecture with ChromaDB.

**Tailldown Markup Language:** Markup language extending Markdown with plain-English styling and zero-config interactivity. Built with unified/remark/rehype, CodeMirror 6.

**AI Multi-Agent Simulation:** 24/7 autonomous system testing LLM consistency and decision-making. Multiple AI personalities with distinct behavioral strategies.

### **EDUCATION & CERTIFICATIONS**

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**Computer Engineering / Computer Science**, 2 years coursework

**Certified Fiber Optic Technician (CFOT)**

Ongoing learning through building production systems and working directly with AI tools.