Mark Fox

mfox47@gmail.com | 509.998.3667 | linkedin.com/in/markfox1 | github.com/mark-fox | markfox.dev

Software Engineer

Software Troubleshooting | System Modernization | AI Engineering Support | Technical Documentation

Software Engineer with 3+ years of experience delivering backend and full-stack solutions, with a focus on system modernization, debugging, and operational stability. Skilled in Python, Java, and SQL, with hands-on experience building and deploying web apps, APIs, and backend services. Background includes applied AI/ML work (training data prep, model validation) and recent completion of IBM's AI Engineering Professional Certificate.

AI & Applied Machine Learning Experience

- Prepared and anonymized 1,200+ legal documents for training an AI contract-extraction model.
- Validated ML model outputs for recall/precision accuracy, directly influencing model tuning and deployment.
- Completed IBM AI Engineering Professional Certificate (Coursera), with hands-on projects in machine learning, deep learning, and NLP.
- Tools: Python, Pandas, scikit-learn, TensorFlow, PyTorch, Jupyter

Technical Skills

Programming Languages & Frameworks:	Python | Java | JavaScript | C# | C++ | HTML/CSS | Flask | Spring Boot Spring Security | Thymeleaf | MERN Stack (MongoDB, Express.js, React, Node.js)
Software Development & Practices:	Agile/SCRUM | Unit Testing | RESTful APIs | Microservices Architecture CI/CD Pipelines | Full-Stack Development | Backend Services | Debugging Clean Code Principles | System Troubleshooting
Version Control & Collaboration:	Git | GitHub | Jira
Operating Systems & Platforms:	Windows 7/10 | MacOS
Data & Database Management:	SQL | Microsoft SQL Server | MongoDB

Professional Experience

Optum | Eden Prairie, Minnesota   **July 2022 - Present**
Software Engineer
Oversee maintenance, troubleshooting, and incremental modernization of legacy immunization data systems while acting as the primary knowledge resource for two aging platforms.

- Lead the troubleshooting and configuration management for two critical immunization data systems in Python and Java, ensuring continuous uptime in the absence of formal support structures
- Contributed to the successful completion of a major Spring Boot upgrade project and coordinated implementation activities across a multi-team environment
- Create detailed internal documentation with screenshots and step-by-step procedures to preserve institutional knowledge, reduce downtime, and prepare for future knowledge transfer
- Resolve all internal inquiries related to system performance and data processing accuracy in support of multiple state vaccination registries

Data Recognition Corporation | Plymouth, MN   **February 2021 - April 2022**
Technical Agent, Software Support
Provided front-line technical support for standardized testing systems used by public and private schools across the US and delivered troubleshooting guidance, including device reboots, menu navigation, and test setup verification.

- Handled approximately 1,500 inbound support calls, diagnosing and resolving device and software issues related to test administration tablets and software portals
- Transitioned to supporting the DEOCS military survey project, adapting quickly to a new testing platform and maintaining service quality standards
- Escalated complex technical issues to specialized engineering teams to facilitate rapid problem resolution with no service disruption

Wells Fargo | Eagan, MN   **December 2019 - June 2020**
Systems Quality Assurance Analyst
Supported the development of an AI-driven contract management system by preparing secure datasets and validating machine learning outputs for accuracy.
- Masked confidential customer data across 1,200+ legal documents using Microsoft Word to ensure security compliance and enable safe AI training
- Validated AI-extracted contract terms and performed recall testing that informed model tuning and deployment readiness, maintaining meticulous tracking to monitor project completion status across a distributed team
- Participated in a broader initiative to digitize and automate contract extraction aimed at eliminating manual intervention through AI querying and model-assisted classification
- Contributed to supervised learning workflows by curating and anonymizing contracts for ingestion into an AI-based contract extraction model

Activision Publishing, Inc | Eden Prairie, MN   **June 2018 - April 2019**
Quality Assurance Tester
Performed structured quality assurance testing for the release of Call of Duty: Blackout, including identifying, documenting, and retesting game issues to ensure product stability.
- Conducted daily bug identification and regression testing, authored detailed bug reports with reproduction steps, and maintained high standards of game functionality across multiple playtest environments
- Queried JIRA databases to retrieve and update current bug tracking information, streamlining issue management workflows, and supported large-scale pre-release playtesting initiatives to verify system integrity and UX quality

Fairview Health Services, IT Department | Minneapolis, MN   **June 2016 - November 2017**
Project Technical Analyst
Coordinated key logistics and database management for a large-scale print services modernization project spanning hospitals and clinics across the Fairview network.
- Coordinated contract worker schedules and activities to drive delivery of project milestones and trained five new interns, significantly boosting departmental support capacity and knowledge retention
- Maintained and updated project databases to establish reliable and auditable records for project status and performance tracking
- Worked closely with project managers to verify printer replacements and installations were completed accurately across multiple healthcare sites

Open Access Technology International, Inc | Minneapolis, MN   **January 2013 - January 2016**
Associate Manager Administrative Support
Managed administrative operations for internal documentation, reporting, and process improvement initiatives while earning multiple promotions through roles of increasing responsibility.
- Initiated and developed a comprehensive documentation system for administrative processes which reduced onboarding time for new hires and minimized knowledge silos
- Delivered monthly customer status reports with 100% on-time completion and accuracy and adherence to internal review protocols
- Created Excel macros and custom spreadsheets to streamline repetitive administrative functions and edited internal documentation for enhanced clarity, consistency, and professional standards
- Provided training and support for Project Managers on Microsoft Project, enabling more effective project management across internal teams

Independent Projects

AI Document Analyzer: Built a FastAPI-based application that processes PDF uploads, generates vector embeddings, and enables semantic search and document question answering using pre-trained language models. Integrated Python data handling, REST API endpoints, and embedding workflows to demonstrate applied AI in a production-style environment.
Patient Portal: Developed a Spring Boot portal with secure login (Spring Security) and dynamic entity management, demonstrating backend engineering and secure data handling.
Issue Management App: Built and deployed a full-stack issue management system (MERN) with REST APIs, user auth, and MongoDB persistence, enabling multi-user bug tracking and resolution.

Education & Certification

Bachelor of Arts (BA) in Psychology | University of Minnesota | Minneapolis, MN
Associate of Applied Science (AAS) in Software Development | Minneapolis Community & Technical College | Minneapolis, MN