

Mark Fox

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Software Engineer

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

Adaptable and detail-driven software professional with proven experience supporting, maintaining, and modernizing complex legacy systems while building a foundation in full-stack and backend development. Skilled in troubleshooting, debugging, and incremental software enhancements with a focus on operational stability, internal support, and technical documentation. Leveraging a strong command of Python, Java, Spring Boot, SQL, and Agile collaboration practices, combined with a passion for problem-solving to bridge technical gaps between engineering, operations, and end users. Currently expanding knowledge in AI engineering and large language models, with hands-on experience preparing AI training data and an active focus on Python-based development workflows.

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 Software Engineer	July 2022 - Present
Oversee maintenance, troubleshooting, and incremental modernization of legacy immunization data systems while acting as the primary knowledge resource for two aging platforms.	
<ul style="list-style-type: none">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 structuresContributed to the successful completion of a major Spring Boot upgrade project and coordinated implementation activities across a multi-team environmentCreate detailed internal documentation with screenshots and step-by-step procedures to preserve institutional knowledge, reduce downtime, and prepare for future knowledge transferResolve all internal inquiries related to system performance and data processing accuracy in support of multiple state vaccination registries	
Data Recognition Corporation Plymouth, MN Technical Agent, Software Support	February 2021 - April 2022
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.	
<ul style="list-style-type: none">Handled approximately 1,500 inbound support calls, diagnosing and resolving device and software issues related to test administration tablets and software portalsTransitioned to supporting the DEOCS military survey project, adapting quickly to a new testing platform and maintaining service quality standardsEscalated complex technical issues to specialized engineering teams to facilitate rapid problem resolution with no service disruption	
Wells Fargo Eagan, MN Systems Quality Assurance Analyst	December 2019 - June 2020
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

Patient Portal: Designed a Spring Boot-based entity management platform with integrated authentication through Spring Security, utilizing backend development skills and secure data handling for dynamic user interfaces with Thymeleaf.

Issue Management App: Developed a full-stack issue management system using the MERN stack, building RESTful APIs, managing MongoDB data structures, and creating a responsive React-based user interface to track and organize issues.

Portfolio: Engineered a dynamic personal portfolio site leveraging Python and Flask, reading structured data files and serving responsive content to enhance visibility and organization of professional projects and skills.

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

IBM AI Engineering Professional Certificate (*In Progress*) | Coursera