Erik Hefferly

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ABOUT ME

I am a software engineer who enjoys solving problems and building high quality software to meet customers' needs. I am a leader and a team player who values clearly written, scalable, and maintainable systems that provide the best possible solution for my users.

SKILLS

Leadership, Active Listening, Empathy, Teamwork, Agile, Mentoring, Learning, Communication, Writing, Architecture

TECHNOLOGIES

TypeScript, Node, React, Angular, Docker, Kotlin, Java, JPA, Spring Boot, SQL, CI, Liquibase, Flyway, AOP, OpenShift, Kubernetes, RabbitMQ, Kafka, Keycloak, LDAP, OAuth, REST, JMS, J2EE, Camel, JSP

EDUCATION

Missouri S&T - Rolla, MO *(1987 - 1989)*
B.S. in Computer Science

BAC - Belleville, IL *(1985 - 1987)*
Associates of Science

PROJECTS

Chip - Creator of and contributor to a CLI tool developed to set up and manage suites of microservices in local environments. Supports Node, Kotlin, Java, and leverages docker for infrastructure such as databases and queues. Currently used by several teams at UniGroup.

Android Accessibility App - Created a user-friendly mobile app for my elderly father to prevent accidental calls. It displays an intuitive list of contacts and prompts the user to confirm before a call is placed. My father was about to stop using his smartphone until this app transformed his experience!

PROFESSIONAL EXPERIENCE

Mastercard, St. Louis — *Lead Software Engineer*   Nov 2021 - Present

- Led a team of 6 engineers to replace a monolithic batch fraud notification system with microservices using Spring Boot, Java, Kafka, and Oracle. I designed the new system to be fault-tolerant, resilient, scalable, self-healing, and multi-regional, ensuring compliance with local PII laws. System supports multiple ingestion methods, integrates with various internal systems for data cleansing and quantification, and processes over 100k daily events. These enhancements provide sustained global legal compliance, expedited notifications, and prevent $10-$100M in fraud daily.

- Overhauled a customer mapping system siloed in a single application. Transitioned from a bulk table-loaded system to a Kafka event-driven architecture with microservices. The events are time-critical as they contain banking account ranges. This upgrade ensures near real-time updates to these ranges, creates new API access, and enables department-wide data accessibility. The new system enhances data accuracy, prevents customer misdelivery, ensures regulatory adherence, and avoids potential multimillion-dollar litigation costs.

- Designing and developing an enterprise-wide API using Spring Boot, Java, and Postgres, integrating disparate data sources to enable seamless access to consolidated information through consuming applications' local keys. This initiative enhances decision-making capabilities and drives revenue growth by unlocking previously untapped data insights for each application.

UniGroup, St. Louis — *Lead Software Engineer*   May 1997 - Nov 2021

- Full stack developer using React, TypeScript, Spring Boot, Kotlin, and PostgreSQL. Leading a team of 4 engineers, I designed and built a web app that enabled our agents to configure their service areas for customer leads. This increased efficiency as agents now get higher quality leads, customers are immediately routed to the appropriate agent, and marketing can geographically target advertising. These improvements eliminated over $2,000,000 in annual expenses and increased our customer conversion rate by 30%.

- Led a team of 3 engineers building an international order management system that integrated with the "U.S. Blocked Persons List". I designed and implemented a highly configurable business rule engine with an interactive dashboard that provided visibility to critical tasks. This system increased order throughput by tenfold saving the company over $1,500,000 per year, reducing errors, improving efficiency, and reducing staff, while processing over 1,000 orders per month.

- Designed and built a "Final Mile" web app in 12 weeks using React, TypeScript, Java, PostgreSQL, and RabbitMQ. My team created a new revenue stream by allowing our agents to deliver bulky items to customers. We ingested orders from our partners, provided a dashboard for planners, enabled them to assemble manifests, and integrated with a van operator mobile app. Within three months of launch over 7,000 orders had been delivered through this new system.

- Joined the Platform team and helped architect and build a PaaS solution to create a paved road for engineers to quickly create and deploy new applications. I also created customized docker images that supported Java, Node, NGINX, and Python. I am proud to have made such drastic improvements to the developer experience. New application setup time was reduced from 2 weeks to mere minutes. To date, over 17,000 microservices have been deployed to production on this platform.

- See Addendum for additional accomplishments.

ADDENDUM

UniGroup, St. Louis — *Lead Software Engineer*   May 1997 - Nov 2021

- Designed and built a key component of UniGroup's internet leads system (the first Java application at UniGroup). I wrote a round-robin routine that finds the next available agent within a certain radius and notifies them of the potential customer. This allowed potential customers to be distributed to the appropriate agencies based on the customer's zip code. In its first year of use, UniGroup realized $15 million dollars in additional revenue directly due to the Internet leads program.

- Using Java, Spring Boot, Postgres, and Javascript, I was part of a large effort to develop a Warehouse Management/Invoicing System. I architected the invoicing component and led a team of 3 engineers to develop this web app. I also mentored other St. Louis teams spun up to support this effort. My liaison role saved UniGroup over $16,400 dollars in travel expenses. This system replaces thousands of disparate agency systems with a unified web app saving the agency network over $10 million dollars.

- Built a mobile-friendly web app that brought together all critical data a driver would need such as order & dispatching information, messaging & communication, agency location info, and most importantly the ability to view & print electronic documents. Before I developed this app, our drivers had no access to information until they physically checked in to an agency. The system quickly became an invaluable tool providing over 9,000 drivers with 24/7 access to all their pertinent information while on the road.

- Created web services using Java and Spring that transformed every department who needed access to electronic documents. Prior to this, all document retrieval was done via the proprietary Content Management System (CMS) forcing users to pivot from their main job. My work allowed more than 20 apps to retrieve contextual documents, eliminating user pivoting, increasing efficiency, and providing access to over 1 million documents for 100,000 orders per year. This was a truly rewarding experience.

- I enhanced a Service Crew web app (written in Java and Spring) to include a new feature for picture uploading and badge generation. Prior to this, each of our agencies were creating badges with whatever technology they had at each location. My enhancement provided audit points for headquarters and resulted in consistent badge generation for over 21,000 crew members across 1,800 agencies. This greatly reduced our legal risk, brought us back into compliance, and improved the customer's experience when interacting with our crews.

- Proposed an eSignature proof-of-concept to stakeholders. Using Java & Spring I created a service that emailed a link, the user authenticated, and the document was displayed requesting a signature. Users legally acknowledged the signature, the document was stamped & stored, and a thank you page was displayed. This novel capability empowered engineering teams to move towards a paperless environment.

- Architected and implemented a system to provide User Administration Reporting. Because UniGroup's data was stored in disparate systems (e.g. LDAP & DB2), it was impossible to properly report user information. I implemented a solution that merged all this data into a single, easily queryable repository. This saved the company $2200 in the first year alone by eliminating inaccurate "active user" fees. During a recent project, it identified 120,000 records as orphaned, saving significant time and effort that would otherwise have been spent migrating these accounts. It is also a critical auditing tool for the security team who is otherwise forced to fly blind during control audits.

Ciber Inc., St. Louis — *Senior Software Engineer*   March 1996 - May 1997

- Worked with stakeholders to understand their legacy medical hardware. Researched and identified risks and efforts necessary to migrate data to another platform. Shared findings with their legal department and ultimately saved the company $400,000 in unnecessary expenses.

- Worked with a team of 4 engineers to build software that integrated hospital patient data with a new lab system.

UniGroup, St. Louis — *Senior Software Engineer*   April 1992 - March 1996

- Led an effort to prove out a new tech stack and develop tooling to improve developer productivity & rapidly deliver systems with fewer engineers. Our work reduced new application setup time for engineers from days to hours.

- Led a team that created a new pricing system for shipping routes composed of 30+ modules. We delivered weeks ahead of schedule by using the new tooling. This system enabled users to table 10,000+ rates and price over 1,400 orders per month.

Datatronics, Fort Smith — *Software Engineer*   January 1990 - April 1992

- Supported transportation applications using Assembler, Cobol, CICS, and DB2.