Craig McDaniel

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Summary

Principal-level engineer with a 25-year track record of owning architecture, leading cross-functional delivery, and modernizing legacy systems in regulated industries where correctness and reliability matter. Brings a rare blend of technical depth and product awareness, consistently bridging business intent with technical execution. Adept at translating complex requirements into scalable architecture and guiding teams through modernization and AI-assisted development. Provides engineering leadership, product-driven consulting, AI transformation strategy, and fractional CTO services.

Core Leadership Competencies

- Engineering leadership & team building
- Technical strategy & architecture governance
- Cross-functional partnership (Product, Compliance, Ops, Data)
- Modernizing legacy systems & platform migration
- Developer experience, tooling, and productivity

Selected Achievements

- **MethCheck**: Built the initial version of MethCheck, now used by 42k+ retailers nationwide, blocking 24M+ illegal PSE transactions and achieving ~90% market coverage.
- **Cassandra**: Built configuration-diff framework supporting 20+ Cassandra releases for enterprise cluster lifecycle management.
- **ID Parsing**: Developed enterprise ID parsing system used nationwide across compliance and identity workflows.
- **Zero-defect Clojure app**: Delivered a multi-region, zero-defect Clojure application at Deutsche Bank that ran nine months between releases with no downtime.

Technology Expertise

Clojure, Go, Python, Scala, Ruby, Java • ClojureScript • AWS • Cassandra, Elasticsearch, PostgreSQL • Kubernetes, Docker • Distributed systems • Data pipelines & integration • CI/CD • Functional programming

Professional Experience

Staff Software Engineer

Fifth Third Bank (Dividend Finance) — San Francisco, CA | Cincinnati, OH (remote)
2021–Present

Led architecture and development of the solar lending point-of-sale platform, including major workflow changes to support multi-party applications.

Designed integrations and data flows with external systems such as Blend, Encompass, and Recheck for point-of-sale, underwriting, identity verification, and document processing.

Improved CI/CD reliability and deployment workflows by collaborating with DevOps to

streamline build pipelines and reduce production friction.

Mentored engineers through code reviews, pairing sessions, and architectural discussions, raising code quality and consistency across the team.

Adopted AI-assisted development tools (e.g., GitHub Copilot) to accelerate workflow implementation, enabling delivery of new HELOC point-of-sale features in weeks instead of months.

Staff Software Engineer
Guaranteed Rate — Chicago, IL (remote)
2020-2021

Technical lead for the enterprise Data Search Platform used across all loan and mortgage applications, responsible for backend architecture and search reliability.

Designed and implemented backend services supporting high-volume, low-latency search operations across the enterprise.

Built the Real-Time Search Admin Service to enable safe index lifecycle management — preventing accidental index corruption and improving operational control for internal teams.

Enhanced the internal DSL for loan data projections, reducing onboarding time for new engineers and simplifying how product teams defined search behaviors.

Partnered with Product, InfoSec, and Compliance to ensure search features met regulatory requirements around borrower data, auditability, and access controls.

Principal Software Engineer
DataStax – Santa Clara, CA (remote)
2015-2020

Founding engineer for Lifecycle Manager, a configuration and orchestration tool for Apache Cassandra clusters used by enterprise customers.

Architected the configuration "definition file" system supporting 20+ Cassandra releases, enabling consistent cluster operations across diverse versions and environments.

Influenced language choices and engineering practices across subprojects, helping unify tooling and improve maintainability across the Lifecycle Manager ecosystem.

Implemented core cluster operations — install, upgrade, repair, backup, and restore — with automation for multi-node orchestration and safe rolling upgrades.

Designed orchestration workflows to manage cluster topology changes, node lifecycle events, and operational safety checks.

Collaborated with Product and Support to shape roadmap priorities, address customer issues, and refine features based on real-world operational feedback.

Co-led provisioning workflows across bare metal, VMs, and containerized environments, ensuring consistent cluster lifecycle management regardless of deployment substrate.

Led containerization strategy for the Cassandra Kubernetes Operator team, shaping how cluster

lifecycle operations translated into Kubernetes-native workflows.

Senior Consultant, Software Development
Infusion – Raleigh, NC
2014-2015

Selected for MetLife's SWAT team tasked with modernizing the global sales platform, providing rapid architectural and implementation support during a critical delivery window.

Full-stack development across AngularJS, Java/Spring, REST APIs, and MongoDB, helping stabilize and extend core features used by sales and operations teams.

Improved MetLife's technical interview process by evaluating coding exercises, refining question sets, and mentoring recruiters on identifying engineering talent.

Promoted functional programming adoption through workshops and presentations, introducing FP concepts to engineering teams and influencing coding practices across projects.

Assistant Vice President, Software Development
Deutsche Bank – Cary, NC
2012-2014

Led the dbRiskStore team responsible for storing and serving ~8B risk measures per day, ensuring reliability and performance for downstream risk and reporting systems.

Improved Risk Access Point performance by 60% through targeted optimizations to data access patterns, caching, and service-level workflows.

Maintained and enhanced Fandango (first Clojure project) – ran for 9-months between releases with no downtime and zero production defects.

Led development of the Horizon executive dashboard (GWT/Canvas), providing senior leadership with real-time visibility into risk metrics. Won an industry award from IBM for innovation in risk visualization.

Assistant Vice President, Software Development
Deutsche Asset Management – Louisville, KY
2008-2012

Led development of the Orchestra Platform, a multi-region investment research and portfolio management suite used across global asset management teams.

Delivered large-scale data migration initiatives supporting platform modernization and consolidation efforts.

Built real-time analytics ingestion pipelines processing 20–30M analytics per month for research and portfolio analysis workflows.

Introduced Scala and Clojure to improve automation, test coverage, and reliability across core services.

Senior Software Engineer – Core Team
Appriss – Louisville, KY
2006-2008

Core Team engineer for Appriss's primary application platform, a 3–4 person group considered the company's A-team for high-impact development and architectural decisions.

Lead developer for MethCheck, the electronic PSE tracking system now used by 42k+ retailers nationwide, blocking 24M+ illegal transactions and achieving ~90% market coverage.

Built a robust ID parsing engine supporting multiple magnetic stripe and barcode formats to improve accuracy and reduce manual entry errors.

Promoted Ruby adoption across engineering teams and led training sessions with Chad Fowler (co-author of Ruby Gems) to improve developer productivity, code quality, and standardize data interfaces.

Senior Software Engineer
SHPS – Louisville, KY
2005-2006

Led and coached an offshore team of 7–8 engineers, providing technical guidance and ensuring consistent delivery across distributed teams.

Delivered a shared data services hub that unified and transformed data across multiple healthcare platforms, establishing consistent integration and ETL workflows.

Software Engineer II
n+1, Inc. – Louisville, KY
2001-2005

Led development for the TraQline market research system, supporting large-scale consumer analytics for retail clients.

Designed an XML-driven survey platform processing 30k+ respondents weekly, enabling rapid iteration of survey logic and data collection workflows.

Built a high-performance emailing system capable of sending 50k+ emails per hour to support large survey and notification campaigns.

Delivered Linux, Java, and EJB training to customer organizations, including the Kentucky Governor's Office of Technology.

Software Engineer I
Internet Tool & Die – Louisville, KY
1998-2001

Built early web applications in PHP, Python, and Java for customer-facing and internal tools.

Administered MySQL, Solid, and PostgreSQL databases and managed web application infrastructure including Apache, Zope, and Tomcat.

Education

M.S., Computer Engineering & Computer Science — University of Louisville
B.S., Engineering Math & Computer Science — University of Louisville

Selected Endorsements

Representative feedback from engineers, leaders, and clients I've supported.

"Hard-working, dedicated, and does whatever it takes to get the job done… the fastest learner and smartest person I know."
— Matt Mitchell, Appriss

"Encapsulated everything we needed and delivered a product above and beyond our expectations… brilliant is an understatement."
— T. D. Ruth, client at n+1, Inc.

"Has a solution for everything and is exceptionally good at understanding open-source technologies."
— Vineet Bhatt, SHPS

"Highly experienced, and an extremely productive polyglot engineer with strong leadership skills."
— Zeashan Pappa, Infusion