

THOMAS McDOWELL

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TECHNICAL SKILLS

Languages: Python, Java, JavaScript/TypeScript, Rust

Frameworks: Spring Boot, FastAPI, Axum, React

Cloud & DevOps: Git, AWS (EC2, Lambda, S3, SQS and many more), Docker, Terraform, Kubernetes

Data & Messaging: Postgres, MongoDB, Apache Kafka

AI & Developer Tooling: Claude Code (AI pair-programming and code review)

WORK EXPERIENCE

Software Developer

Omni Digital Group

July 2023 - March 2026

Backend developer for Omni Lightning, a digital marketing platform for retail companies

- Created over a dozen HTTP endpoints and migrated HTTP framework from Actix to Axum, improving long term maintainability and performance
- Architected and implemented a custom asynchronous and concurrent job queue for discrete application workloads, enabling reliable processing of large-scale retail data uploads without blocking core application performance
- Designed and implemented a solution for brand and category name normalization between ~15 different point of sale systems, enabling unified and consistent analytics across systems
- Co-led adoption of Claude Code across the development team, establishing best practices for code review, feature implementation, architecture planning, and test generation
- Designed multiple database schemas and optimized query performance through indexing strategies and query analysis tooling
- Improved infrastructure reproducibility and consistency by defining the entire infrastructure stack as code using Terraform
- Migrated primary application from AWS AppRunner to AWS EC2, reducing long-term infrastructure costs and improving operational visibility
- Reduced CI build times and improved developer workflow by optimizing Dockerfile layer caching (~5x faster builds), accelerating the team's ability to ship and validate changes
- Implemented permanent solutions for several high-frequency production support tickets resulting in improved platform reliability

Software Engineer

ACT, Inc.

January 2022 – June 2023

Software Engineer I for the Data Analytics and Reporting Team

- Developed and maintained HTTP endpoints across multiple high-stakes assessment platforms serving millions of students
- Architected and led upgrade of scoring platform from Java 8 to Java 11, improving long-term security posture and maintainability of a critical assessment system
- Administered the WorkKeys career readiness exam platform

Research Assistant

University of Iowa Department of Physics and Astronomy

March 2018 – September 2021

Research Assistant for High Energy Particle Physics Experiments

- Developed a high energy particle simulation using Python and PYTHIA in contribution to new physics research in the CMS collaboration

- Recipient of a 2020 James A. Van Allen Summer Research Grant
- Contributed code to a mass spectrometry analysis with data collected at CERN as a member of the CMS collaboration

EDUCATION AND PROFESSIONAL CERTIFICATIONS

University of Iowa

August 2016 – May 2021

- Bachelor of Arts in Computer Science
- Bachelor of Arts in Physics

Certifications

- Earned SAFe Agile Practitioner certification in June of 2022
- Attended the CMS Data Analysis School at Fermilab in January of 2019