

Zachary R. Holbrook

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EDUCATION

The Ohio State University, College of Engineering

Bachelor of Science in Engineering

Major: Computer Science and Engineering

Columbus, OH

Graduation: May 2021

GPA: 3.50

TECHNICAL PROFILE

- **Languages:** Java, Python, JavaScript, Go, Shell, SQL
- **Technologies:** AWS, Azure, API, Node.js, Splunk, Jenkins, Docker, Vault, OpenSSL, Git, JSON, PagerDuty
- **Certifications:** AWS Solutions Architect

PROFESSIONAL EXPERIENCE

Capital One

Columbus, OH

Software Engineer – Partnerships – Backend, Infrastructure

August 2022 – Present

- Reduced yearly spend by \$10M+ and cut 60,000+ agent hours by leading implementation on externalization of endpoints, entitlements, and 1.5M internal resources via NGINX, Vue, Node, and OpenSearch for Capital One's account servicing
- Dockerized and scaled ECS Keycloak and Infinispan cache instances for federation and identity brokering of partners into Capital One ecosystem via OIDC and SAML protocols with Node, Postgres, Shell, OpenSSL, Splunk
- Leveraged AWS infrastructure tooling across all development and production environments for scalable Highly Available Multi-Region configuration after rigorous performance testing (ECS, IAM, Fargate, Route53, RDS, Aurora Global)
- Implemented core functionality on high-TPS scalable Lambda-based [point-of-sale API suite](#) which transacted \$5M+ rewards and 1M+ calls daily via abstracted layer for flexible and tech-friendly onboarding experience
- Established enterprise-wide standard for asymmetric key conversion and rotation process engaging with security leadership

Software Engineer Associate – Decisioning – Backend, Infrastructure

August 2021 – August 2022

- Optimized 1.2M+ daily orchestration flow for Capital One's credit app by cutting compute cost and increasing resiliency
- Led data validation, data visibility, and streaming efforts for user data in upstream/downstream services via Splunk
- Managed AWS infrastructure to maintain 100% uptime and availability for key resources in Jenkins deployment pipeline with PagerDuty integrations for support (EC2, ASG, ECS, IAM, ELB, Route53)
- Coordinated across Card Tech to provide effective CI/CD and high durability for a smooth customer experience

Ohio State Human Performance Collaborative

Columbus, OH

Software Engineering Volunteer – Backend, Infrastructure

Sept 2022 – Dec 2023

- Created REST APIs and systems to enhance performance, recovery, and strategy of Ohio State's vast athletics program
- Designed end-to-end AWS architecture as alternative to rigid monolith athlete database greatly cutting costs for university
- Built out AWS infrastructure for dataflow directly from athlete wearable technologies to QuickSight interface to showcase live streaming and viability by using Lambda, S3, QuickSight, Cloudwatch, and wearable technologies
- Invoked Pro Football Focus APIs to accumulate mass amounts of historical opponent data and feed to external ML model to generate SWOT diagram and strategize against opponents and provide gameplans for football team

PROJECTS

Cryptocurrency Sentiment Web App

- Created web app that pulls cryptocurrency data on 100+ types and provides charting with relevant sentiment, statistical evaluations, and the recent associated data while maintaining a desktop and mobile friendly design
- Developed with Blazor server utilizing C# / .NET 5.0 framework, Azure functions, Azure Cloud SQL Database, Flask API, deployed in Docker container via Azure app service at <https://cryptoment.azurewebsites.net/>

IBM Watson Recipe and Playlist Generator

- Designed and built a web app that uses a custom IBM Discovery model and the Spotify API to provide users food recipes and music recommendations based on current ingredients available in household
- Built using Django, Python, Vanilla JavaScript and HTML with Bootstrap styling. IBM Discovery modeled used 1000+ scraped recipes to query from and generate unique recipe/playlist combinations

INVOLVEMENT AND INTERESTS

- **VCU Capstone Tech Lead** – Mentor VCU students on gamification senior AI Capstone project leveraging Stripe API for sample transactions and payments by assisting with coding challenges, debugging, scoping, and general expertise
- **Coders** - Volunteer 2 hours per week to teach underprivileged middle schoolers fundamental coding principles (HTML, CSS, JS, Bootstrap) and develop a basic website on a topic of their choosing via Replit
- **Interests** - Philosophy, Basketball, Healthcare Performance, Blender, Photography, Residential Architecture, Fragrances