Jacob Coleman

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Summary

As a highly driven and curious technologist in system reliability and process optimization, I thrive in environments that demand intensive problem-solving, analytical rigor, and a flair for innovation. My extensive development expertise and strong DevSecOps foundations position me to enact transformational change through technology. I aim to lead projects and teams with a commitment to resilience, efficiency, and positivity, ensuring results in fast-paced, dynamic environments.

Professional Experience

Mozilla - San Fransisco, CA (Remote)   *December 2023 to June 2024*
Staff Data Site Reliability Engineer
DataOps & SRE

Architected, implemented, and deployed numerous solutions and tools to align the organization with data, security, and cost optimization standards and best practices. These deployments were successfully executed within Google Cloud and leveraged numerous services including GKE, GCS, BigQuery, and others. All solutions leveraged the concurrency power of Golang and followed idioms and best practices. In addition, guidance and strategy were provided across multiple teams for multiple initiatives including Generative AI.

- Provided strategic guidance and execution for upgrading the internal login authentication system, including the transition to the most secure Duo Authentication solution across all Mozilla operations.
- Implemented and deployed two open-source projects within GKE for use by Mozilla's machine learning and data science teams, focusing on data privacy mapping and MLOps. This included making upstream changes to Helm charts to ensure successful deployment in GCP.
- Developed and deployed internal tools to monitor project and resource usage, offering actionable insights for cost optimization across Google Cloud projects.
- Created and utilized tools for efficiently moving, restoring, and deleting hundreds of millions of files, achieving a significant data reduction by removing 1.3 petabytes of unnecessary data from archive.mozilla.org, resulting in five-figure monthly savings.
- Established prompt engineering guidelines and best practices when integrating products and processes with Generative AI (ChatGPT, Claude.ai).

Jahnel Group - Schenectady, NY (Remote)   *March 2023 to November 2023*
Principal Software Engineer
AI Finance Decision Making Platform

Architected, implemented, and deployed numerous event-driven, microservice-based systems, catering to a diverse clientele across various industries. These deployments were successfully executed on all three major cloud platforms: AWS, Azure, and GCP. The strategy was to incorporate best practices from DevOps, Site Reliability Engineering (SRE), and software development, utilizing a mix of Python, Golang, and C#. My expertise extended beyond system design to mentorship in programming, optimization, career development, and strategic problem-solving in areas such as clean architecture, code efficiency, and advanced programming concepts.

- Guided and mentored individuals across the entire organization in programming, optimization, career growth, and decision making. Subjects ranged from, but were not limited to: clean architecture and code, concurrency, vectorization, transformers and embeddings, code organization, frameworks for navigating professional performance and career development, and how to frame and approach numerous and diverse problem spaces among many others.
- Established and used AWS Well-Architected Framework, Data Engineering, DevOps, SRE, and Security best practices to remediate current infrastructure and system design to follow latest Cloud standards and best practices while ensuring optimal cost-efficiency.
- Provided Cost Optimization techniques and tools, including internal solutions that range from LLM-based solution generators to full iterative processes leveraging tools such as Lambda Powertuning and others.

- Created end-to-end AWS cloud-native architecture for an AI decision making platform including reconciliation logic and actionable data.
- Leveraged Azure Databricks, Autoloader, Functions, Delta Tables, Unity Catalog, and Storage Containers for a clean and highly-performant client MVP related to EDI X12 Healthcare data and analysis in Python and C#.
- Reviewed and realigned a C# codebase for reliability and stability for when custom serial hardware is used in the field in the construction and materials industry.

Internally:

- Creator and champion of machine learning, data engineering, and prompt engineering Slack channels.

Jahnel Group - Schenectady, NY (Remote)   *January 2022 to March 2023*
Senior Site Reliability Engineer

Conducted a comprehensive audit of various systems and problem domains, notably a healthcare revenue lifecycle management platform, to align with industry-leading software, cloud, and data practices. This work involved a complete overhaul and optimization of the tech stack to enhance performance and foster innovation following SRE and DevOps best practices. My role as the lead architect and engineer included establishing rigorous documentation, incorporating best practices, and integrating continuous integration/continuous delivery (CI/CD) processes. Furthermore, I developed and launched a state-of-the-art, fully event-driven, serverless Extract, Transform, Load (ETL) Data Pipeline leveraging AWS Lambda, Step Functions, EventBridge, and S3, among other services, culminating in a self-regulating Data Lakehouse solution.

- Executed an exhaustive assessment of the current state and performed a thorough application audit to determine the scope of work, identifying risks, areas for enhancements, and cost evaluation.
- Offered expert architectural guidance throughout the project lifecycle, from data ingestion to the feedback loop of the model endpoint, covering data engineering, cloud engineering, and software development methodologies.
- Transitioned the existing CDK deployment framework and Infrastructure as Code (IAC) to a GitHub Actions and SAM deployment system, which included segregating data and codebases to facilitate independent deployment streams.
- Applied Data Engineering, DevSecOps, Site Reliability Engineering (SRE), and Security best practices to update and refine the existing infrastructure and system design, ensuring alignment with the latest cloud technology innovations.

Microsoft AAA Game Studio

In alignment with DevOps, SRE, and security principles, I spearheaded the scalability of the infrastructure to manage over 500,000 requests per second without downtime. This effort not only met but surpassed Microsoft's stringent standards for security and remediation, achieving a 100% success rate across all initiatives, including several ambitious stretch goals.

- Leveraged DevOps, SRE, and security best practices to systematically resolve infrastructure challenges, managing over 500,000 requests per second with zero downtime, surpassing Microsoft's benchmarks for security and remediation, and successfully meeting all targets, including additional stretch goals.
- Created numerous robust Golang-based tools that enabled seamless discovery and rectification of potential issues across all accounts, regions, and services, addressing critical areas such as security group CIDR ranges, encryption of data at rest and in transit, network traffic security, caching mechanisms, disk encryption, firewall configurations, user permissions, and overall data protection.

- Enhanced the efficiency of remediation processes and Golang tools by adopting serverless state machine workflows and tapping into the native concurrency features of Golang, utilizing wait groups and channels for parallel operations.
- Engineered a fully autonomous anomaly detection system that autonomously manages remediation, error checking, rollback procedures, and notifications specifically for TLS policy issues, significantly reducing the demand on internal resources.

Internally:
- Implemented facial recognition in internal Jahnel Group stair tracking application for hands-free tracking and enrollment via serverless architecture, winning 2022 Jahnel Group Hackathon.
- Automated, cost-optimized, and significantly improved the performance of the internal Jahnel Group time tracking application for company wide contractor use.

NetJets - Columbus, OH (Remote)   *March 2021 to December 2021*
Senior Model Engineer
Finance
Architected, implemented, maintained and continuously developed financial analyses, Monte Carlo simulations, machine learning models, and all relevant infrastructure including architecture, proof of concept, data, model, code, containers, and pipelines for fully autonomous build, deploy, and execution.
- Parallelized simulation processes, collapsing serial model execution times by an average of 150x and providing actionable output within minutes relative to days.
- Decoupled numerous monoliths into microservices, leveraging state machines for orchestration and event-driven architecture to allow the creation of replaceable components, providing a fully serverless backbone for simulation and model execution using DevOps and SRE best practices.
- Created and automated data ingestion, ETL, and aggregation processes from disparate data sources into an AWS data lake, Snowflake, and ERP software while automating all underlying components including code library updates, container builds, and execution by leveraging multiple automation suites and infrastructure as code.
- Established all standards and best practices regarding Amazon Web Services, CI/CD, DevOps, and Python to create a full data and modeling ecosystem that provides an ad-hoc analysis playground and agile development space that promotes code review and collaboration.

NetJets - Columbus, OH (Remote)   *July 2018 to March 2021*
Senior Cloud Engineer (AWS)
Information Technology
Architected, implemented, maintained and continuously developed integral business Cloud technologies by applying architectural standards and best practices, thorough testing, and rigorous cost analysis to provide industry-leading value and performance.
- Provided multiple time and space complexity reductions to production code and systems, saving millions of dollars and thousands of man-hours via the integration and application of cutting-edge Cloud, Analysis (Monte Carlo) and Machine Learning systems.
- Developed numerous state machine automation systems for security hardening, cost analysis, permission scoping, real-time performance tuning, and code and container build processes leveraging DevOps and SRE best practices.
- Responsible for all Cloud Cost Optimization, including establishing standards and best practices in the entire AWS Cloud stack for code design, code efficiency, system architecture, and production automation to maximize spend and performance.

- Trained and guided numerous individuals from diverse backgrounds on understanding and fully implementing different code styles and practices to achieve positive results which can be felt throughout the company.
- Established and maintained the entire company-wide Cloud knowledge-base, standards and best practices, and provide architecture and code used as the gold standard for numerous teams and individuals across departments.

Garden City Group - Dublin, OH (Remote)   *May 2013 to March 2018*
Linux Systems Administrator & Cloud Architect

Responsible for the architecture, implementation, maintenance and future development of the entire Amazon Web Services environment along with RHEL 5/6/7, JBoss, Apache, and a mixture of other open source systems.

- Architected, implemented and maintained the production AWS Cloud infrastructure utilizing a broad spectrum of Amazon Cloud services including stateless and loosely coupled systems relying on Lambda logic and Step Functions for optimal cost and performance efficiency, and DevOps and SRE best practices for unattended and fully automated deployments.
- Implemented and managed Red Hat Enterprise Linux and Amazon Linux 2 across various environments, including physical, virtual, and cloud servers, and handled package installations and updates leveraging Ansible, Chef, and Puppet.
- Responsible for all Cloud Cost Optimization, including establishing standards and best practices in the entire AWS Cloud stack for automation, code design, code efficiency, deployment, system architecture, and production automation to maximize spend and performance.
- Establish and maintain server monitoring and disaster recovery using open-source tools, along with configuring Apache virtual hosts and various network services like DNS, NTP, and SSH.
- Conducted regular security reviews and updates for systems and applications, maintained detailed documentation for server configurations, and manage list servers.
- Installed and supported a range of server applications including Apache, Tomcat, and JBoss, ensuring environment consistency and aiding in application server deployment and cluster maintenance.

JPMorgan Chase - Columbus, OH   *December 2012 to March 2013*
Release Management & Systems Engineer

Responsible for deploying code changes and web deployments in all environments, batch support, delivering immediate break-fix coverage, on-time delivery of project deliverables (BAU and new projects), and SLA compliance in production and non-production environments.

- Provided technical support for web application deployment and configuration for UNIX/Linux and Windows platforms.
- Installed, configured, identified and repaired problems with WebSphere and WebLogic related tasks as well as operating system, application, and user level issues.
- Communicated and coordinated with Application Developers, vendors, and other teams within the organization.
- Documented customer systems, processes and programs and advised clients on ways to enhance operational efficiency.
- Scheduled and executed change controls per the guidelines from the change control process and the Infrastructure/Information Technology Service Management (ITSM) system.
- Supported customers in a follow the sun, 24 hour a day model including off hour deployments and served as Application Group contact for Disaster Recovery needs.

Technical   *Amazon Web Services*

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Snapshot

Over 16 years of experience architecting and implementing systems that use cloud services to build as cost efficient and performant solutions as possible across a broad spectrum of problem spaces.

Technical Skills

Agile, Agile Methodologies, Amazon CloudFront, Amazon CloudWatch, Amazon DynamoDB, Amazon EBS, Amazon EC2, Amazon Redshift, Amazon S3, Amazon SQS, Amazon VPC, Ansible, AWS, Azure, Bash, Build Automation, C#, CDK, Cloud Architecture, CodeBuild, CodePipeline, Computer Security, Cost Optimization, Data Engineering, Data Mining, Datadog, DevSecOps, Docker, Docker Products, FinOps, GCP, Git, GitHub Actions, Go, Golang, Hardware Repair, Helm, Hexagonal Architecture, Infrastructure, Infrastructure as Code (Terraform, Pulumi, CDK, SAM, Ansible), Jenkins, Kubernetes, Linux, Machine Learning, Microsoft Azure, MLOps, Network Security, New Relic, Open Source Software, Optimization, OSX, Packer, PERL, Podman, Ports & Adapters, Programming, Python, Shell Scripting, Solaris, SQL, SRE, System Administration, System Architecture, System Engineering, Troubleshooting Hardware, UNIX, Vagrant, Vault, VMware ESX

Certifications

AWS Machine Learning Specialty
AWS Certified Solutions Architect Associate
AWS DevOps Engineer Professional

Achievements

13 World Records for calculating Pi via Y-Cruncher, all using a hand-built Linux kernel on an AWS X1 instance. Jahnel Group 2022 Hackathon Winner.