ZACHARY LIEBERMAN

(202)-341-5802 | zacharylieberman1@gmail.com | www.linkedin.com/in/zachary-lieberman6 | Target Location: Los Angeles, CA

EDUCATION

University of Virginia School of Engineering and Applied Sciences, Charlottesville, VA

B.S., Computer Science, Engineering Business and Data Science Minor May 2023

SKILLS

- **Cloud Systems:** Cloud Custodian, Amazon Web Services (AWS), VPC, Lambda, Fargate, Batch, CloudFormation
- **DevOps Tools:** Docker, Jenkins, Git, Kubernetes, Terraform, n8n
- **Database:** PostgreSQL, RDS, DynamoDB, SQLAlchemy, Alembic, MySQL
- **Languages:** Python (Flask, boto3), TypeScript, Java, SQL, Bash, JSON, YAML

WORK EXPERIENCE

Capital One, McLean, VA January 2025- Current
Senior Associate Software Engineer

- Maintained the Cloud Custodian Platform, an enterprise-wide cloud compliance platform, servicing 3000+ AWS accounts with 200M+ daily policy execution runs
- Developed smart batch job Lambdas, SQS queues, and DynamoDB databases that determine cloud resources in an account before evaluating, achieving upwards of $1M annual savings in execution costs
- Moved 100+ services to a new small account model by setting up a new VPC, creating security groups, and altering resources' CloudFormation templates
- Optimized report service by transitioning from S3 file status management to an Aurora PostgreSQL database improving performance and reliability

Capital One, McLean, VA August 2023- January 2025
Associate Software Engineer

- Designed and deployed new Aurora PostgreSQL database with ORM library leveraging SQLAlchemy and Alembic, setting up networking, security, automation, and access while providing comprehensive documentation
- Transformed policy dry runs to assess impact against all affected resources using PostgreSQL database and ECS tasks, diminishing unintended actions and execution errors for 10,000 enterprise policies
- Scaled platform to support a 300% increase in daily executions, expanding from 2 to 6 regions scanned, ensuring compliance across all enterprise resources
- Transitioned time-sensitive audit required Lambda report to Fargate by building object-oriented Python classes, solving time/memory restrictions

PROJECTS

AI Workflow Platform April 2025- May 2025

- Designed and deployed a secure, self-hosted automation platform using n8n on AWS EC2, incorporating best practices in DevOps, containerization, and basic cybersecurity
- Configured Docker and Docker Compose for scalable orchestration and implemented environment-specific variables for robust and reproducible builds
- Positioned the platform for future AI-powered automation by preparing n8n to connect with external APIs and AI agents via custom HTTP nodes, enabling intelligent task execution, smart decision-making workflows, and data enrichment from AI models

Team Slack Bot – Innovation Sprint Project December 2024- January 2025

- Created Slack bot for recurring team information during 2-week innovation sprint, aiming to increase team productivity and efficiency
- Hosted the Slack bot on a Bolt Python server within a Fargate cluster utilizing object-oriented classes and CloudFormation templates
- Developed commands in common library to integrate with APIs such as PagerDuty and ServiceNow for Slack bot functionality

OTHER

Certifications: AWS Certified Solutions Architect – Associate (2023)
Awards: CapitalOne TechX 2023 Q3 Finalist for migration to AWS Graviton instances, saving $1M+ annually
Conferences: PyCon 2025, 'Defense in Depth: Guardrails in Platform Design' at Capital One's 2024 SECON internal convention
Volunteering: Technology Internship Program Mentor in 2024 for 4 interns throughout internship