

Amartya Ranganathan

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EXPERIENCE

GEICO

New York, NY

Software Development Engineer – Public Key Infrastructure

3/2024 – Present

- Overhauled management of GEICO's 4,000+ public certificates, securing all user-facing APIs and domains
 - Implemented a robust Certificate Transparency log monitoring service using open-source packages certspotter and zlint, allowing my team to proactively and efficiently tackle mis-issuances by vendors
 - Conceived a PowerBI dashboard to organize 4,000+ certificates by issuer and common name, highlighting lint failures continuously and automatically using Azure Hybrid Worker and Azure Blob Storage
 - Created ten production endpoints in Golang to issue certificates and store them in a PostgreSQL database
- Collaborated on zero-to-one launch of first in-house certificate authority to reduce issuance costs by ten times
 - Established observability by integrating OpenTelemetry to export logs and metrics to Grafana dashboards
 - Deployed a Kubernetes cronjob to provide daily alerts about expiring certificates through Slack and email
 - Integrated a secrets platform with the service to protect passwords, API tokens, and certificate private keys
- Skills:** Golang, PostgreSQL, Public Key Infrastructure, Azure, OpenTelemetry, APIs, System Design

Amazon Web Services

Seattle, WA

Software Development Engineer – Application Registry

8/2022 – 4/2023

- Built the service-managed attribute groups feature using CloudFormation, API Gateway, and Lambda to automatically create and delete resources associated with 6,000+ applications stored in DynamoDB database
- Reduced execution timeline for all future region expansions from six months to four days
 - Spearheaded integration with end-to-end automation service to create and deploy endpoints and databases
 - Redefined eight service accounts in GovCloud to ease interfacing for team members without clearance
- Reduced operational failures and latency by 30% by monitoring CloudWatch metrics to patch inefficiencies
- Skills:** Java, AWS (CloudFormation, API Gateway, CloudWatch, Lambda, DynamoDB, CDK), System Design

USC Viterbi School of Engineering

Los Angeles, CA

Undergraduate Teaching Assistant

1/2021 - 5/2022

- Developed, taught, and graded foundational Discrete Methods and Algorithms courses, reinforcing complex concepts such as object-oriented design in C++, proofs, and runtime analysis for 300+ students each semester
- Garnered attendance of 40+ students, the highest of all assistants, to each office hour and test review session
- Skills:** C++, Technical Communication, Algorithms, Dynamic Programming, Runtime Analysis, Graph Theory

EDUCATION

University of Southern California

Los Angeles, CA

B.S. Applied and Computational Mathematics | B.A. Economics

8/2018 - 5/2022

Minor in Computer Science

GPA: 3.94

Courses: Programming (Data Structures and Object-Oriented Design, Algorithms, Graphics), Data (Mathematics of Machine Learning, Introduction to AI), Mathematics (Discrete Methods, Probability/Statistics, Real Analysis)

PROJECTS

Abstraction and Reasoning Corpus: Built a multi-headed attention neural network and a reinforcement learning training loop in Python to solve reasoning puzzles from an artificial intelligence benchmark. Built a multi-threaded simulator and domain specific language in C++ using templates, smart pointers, type erasure, OpenMP, and pybind

All.ai: Built a full-stack web application with Flask and Google Cloud API to parse and evaluate input text for inclusivity, winning two diversity-focused hackathons (DubHacks, HackSC) and presenting to Pioneer Square Labs

SKILLS AND AWARDS

Skills: C++, Golang, Java, Python, SQL, Cloud Computing (AWS, Azure, Google), Git, System Design, APIs

Awards: National Merit Scholar, USC Presidential Scholar (half-tuition, ~1% of applicants), Phi Beta Kappa, Summa Cum Laude, Dr. Merten J. Mandeville Scholarship (\$5,000), USC Alumni Club of Seattle Scholarship