Alex Poulos (PhD)

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SKILLS

I am a seasoned cloud developer with **6 years** of experience in multiple backend languages (**Java/Spring, TypeScript/Node.js, Rust, Go**), frontend frameworks (**React, Vue,** and **Angular**), and databases (**DynamoDB**, **Mongo**, and **Oracle**). I have strong operational and infrastructure experience in **AWS**, including strong knowledge of **CloudFormation**. I love tackling complex problems that span the entire tech stack. I excel at **mentoring** other developers and communicating with both technical and non-technical audiences.

RECENT EXPERIENCE

The Washington Post (Arc XP), Washington DC

March 2022 - PRESENT (Full-Time): **Principal Software Engineer - *Arc Video***

- Set the **technical strategy** for a suite of video services that field billions of requests a month.
- Mentored other engineers through extensive **pairing** and **code review**.
- Pioneered the introduction of appropriate new technology into our software stack (e.g. **Temporal** for workflow orchestration).

March 2021 - Feb 2022 (Full-Time): **Senior Full Stack Engineer - *Arc Video***

- Designed and implemented a cost-effective metrics ingestion service that aggregates and stores billions of events per month. This service provides a rich set of observability data for the performance of Arc's Video Player (**Typescript, Lambda, AWS TimeStream, SNS/SQS, DynamoDB**).
- Designed and implemented an approach for provisioning per-customer AWS resources with **AWS CloudFormation**, **CodePipeline**, and **Deno.**
- Modernized the Docker containers and build-pipelines for 4 microservices. Build times dropped from **45** minutes to **5-10** minutes and our security posture improved. (**Jenkins**, **Docker**, **Tomcat**)
- Worked across teams to solve problems in the right part of the stack, even when the "right part" was managed by a different team.
    - Contributed to company-wide **CloudFormation** templates to enable **secure insertion of secrets** into our **ECS** services.
    - Identified a thorny upstream caching problem that caused geo-restrictions to get stuck (**Akamai**, **nginx**).

July 2020 - March 2021 (Full-Time): **Full Stack Engineer - *Arc Video Center***

- Spearheaded a database migration of **hundreds of Mongo databases** from 9 self-run Mongo clusters in **4 AWS regions** into the managed service **MongoDB Atlas**. This led to six figure annual cost savings in database software licensing fees. Our team was recognized with a company-wide Engineering award.

- Participated in feature work across the stack (**Spring Boot/Java**, **React**, **AngularJS**, **MongoDB, Typescript**, a broad range of **AWS** Services including the Elemental Media Services).
- Served on multiple **on-call** rotations (Video Center, Mongo)

Crosscut — *Freelance Developer (Part-time) June 2020 - Present*

Crosscut.io is a public health startup that provides geospatial tooling to serve health campaign planners in mid-to-low income countries.

May 2020 - PRESENT (Part-Time)

- Ported two geospatial graph-traversal algorithms from **Node.js** to **Rust**. This produced a **30x speed increase**, reducing user wait times from about **5 minutes** to **10s** for a planning map to be generated. (**Rust, AWS Lambda, S3)**
- Wrote a CLI in **golang** that computed which polygons should be merged at various zoom levels so that planning maps would load performantly. (**Golang**, **AWS ECS**, **Mapbox Tiling Service**)
- Participated in feature development across the full extent of the stack (**Vue**, **Node.js**, **Rust**, **Go**, **R**, **Docker**, **AWS Lambda, CloudFormation)**.

University of Maryland, College Park, MD — *IT Software Engineer*

July 2019 - July 2020 (Full-Time)

- Designed and built UMD IT's first **serverless** web app, an internal tool used by developers to create test users across multiple internal systems of record. Self-service test users improved security and enabled developers to easily test their apps across different user profiles (**Vue**, **Typescript**, **OpenLDAP**, **AWS Lambda, API Gateway, S3, CloudFront**)
- Architected and executed tricky containerization and cloud migration of our deployment of Grouper, an open-source Java application for Role-Based Access (RBAC). Subsequent major version upgrades took **2 weeks** instead of **2 months** of engineering work. (**Docker, Bash, Oracle, AWS ECS**)
- Designed and implemented a an extensible messaging extension for propagating group memberships between multiple systems using an SNS->SQS fanout approach (**Java**, **Node.js**, **AWS Lambda, SNS, SQS**)

EDUCATION

Catholic University of America — *MA & PhD (Classics)*

May 2019, Washington, DC

North Carolina State University — *BS (Comp Sci) - Valedictorian*

May 2012, Raleigh, NC

AWARDS AND CERTIFICATIONS

AWS Solutions Architect, Associate (Dec. 2019 - Present)
Computer Science Senior Award for Achievement in the Humanities (2012)

HOBBIES

Occasional Open Source Contributor and Blogger
Ancient Greek and Latin Literature