TAM PHAN

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EMPLOYMENT

Amazon Web Services

Software Engineer II · Dec. 2022 to Current · Arlington, VA

Designed and wrote software components required to provide a microsecond-accurate time sync service, reducing our primary metric "clock error bound" from approximately 1000 microseconds to approximately 20 microseconds on our new architecture, beating out our largest cloud competitors by an order of magnitude. This unblocked significant financial services customers/traders from using AWS, and several database developers are onboarding and taking advantage of more accurate clocks for ordering of distributed transactions.

Lead an initiative to restructure and automate our process for building out the AWS Time Sync Service in new physical regions/data centers to reduce operator involvement. This involved writing runbooks for this process and mapping out milestones and tasks. These tasks included building out network devices/time servers, deployment of our service and infrastructure in stages as dependencies become available, and analyzing opportunities for automation at each step.

Mentored and helped onboard several software engineers at all levels (entry level, mid level, senior) into our team and familiarized them with our service by writing better documentation and hosting learning sessions.

Managed ticket queue with internal and external customer asks, root caused and resolved production issues, improved operational stance by runbooks and dashboards, and implementing proper metrics and alarms for auto-detecting issues in our service as part of an on-call rotation.

Software Engineer I · Aug. 2021 to Dec. 2022 · Arlington, VA

Lead campaign to reduce the size of our service's fleet and migrate from baremetal server hardware to a fleet of solely EC2 instances. This reduced costs from ~$2m to ~$600k annually, and freed our team from managing baremetal servers instead of taking advantage of virtualization. This also sped up our service's regional deployments from worst case scenario of 24 hours down to less than 2 hours, helping to accelerate releases across all AWS regions.

Collaborated with team to build the Public Amazon Time Sync Service, which supports time synchronization via NTP from EC2 instances and other customers across the globe. Contributed with building out the AWS CDK infrastructure to support the service, as well as the monitoring components needed to support our load balancing and scaling solution.

Took ownership of time synchronization software across AWS, including the deployment of time sync related software across all internal customer EC2 instances/baremetal hardware, and monitoring our service in production.

Software Engineer Intern · June 2020 to Aug. 2020 · Herndon, VA

Built a service that can monitor maximum clock error bound on customer systems to help onboard cloud customers with time synchronization constraints

Planned and presented design document to demonstrate problem statement, constraints, solution and system design architecture

Wrote entire service from scratch, building modules and unit test modules in Rust

Wrote full customer documentation, plans for vending to customers, and manually tested launching several instances running different Linux distributions to run the binary

Chartio

Software Engineer Intern · Jan. 2020 to May 2020, Aug. 2020 to Dec. 2020 · Blacksburg, VA

Rebuilt authentication flow for application in Django to improve security and allow for safe implementation of on-login functionalities

Built new customer onboarding flow with React/Redux for an improved user interface and simpler, direct onboarding experience

Optimizing ORM queries that caused customer latency, once seeing staggering improvements over 1000%

Set up REST API endpoints in Django accessing PostgreSQL database to support features on client side

SKILLS

CODING/FRAMEWORKS: Python, JavaScript, Rust, Java, C, C#, Golang, React/Redux, Django/DRF, Spring Framework, SQL

ENVIRONMENTS AND TOOLS: Linux, Git, AWS, Unity, Eclipse, IntelliJ IDEA, Visual Studio Code, SoapUI, pgAdmin

EDUCATION

Virginia Polytechnic Institute and State University · Aug. 2019 to May 2021

Expected Master of Science, Computer Science

GPA: 3.81 / 4.00

Virginia Polytechnic Institute and State University · Aug. 2016 to May 2020

Bachelor of Science, Computer Science

GPA: 3.57/4.00

PROJECTS

IdeaSpace

May 2020 to May 2021

Built an AR space for collaborative brainstorming on virtual notes with other AR users as part of my MS thesis.

Wrote, organized and ran user experiments to test different input methods against one another to create virtual notes using the HoloLens with our application.

Captured images via Camera API on HoloLens device to build virtual objects from the images.

Connected Unity/C# client to Python Flask server using OpenCV to process images and translate to virtual objects

Immersive Document Analysis in VR

Jan. 2019 to May 2019

Developed an immersive VR environment for a user to view massive amounts of documents in with Unity/C#

Analyzed use cases and usability studies to improve on app features

Organized client meetings and performed contextual inquiry to narrow use