Vivitsu Maharaja

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SUMMARY

Backend engineer interested in building high-performance, scalable distributed systems.

EDUCATION

Master of Science, Electrical & Computer Engineering — May 2014
University of Florida, Gainesville, FL. — GPA: 3.33/4.0

Bachelor of Engineering, Electronics & Communication — May 2011
Dharmsinh Desai University, Nadiad, India. — GPA: 62/100

EXPERIENCE

Software Development Engineer, Amazon Web Services, Seattle, WA — Jul 2016 - Present

- **Transactional Services** — Aug 2020 - Present
  - Building a new variant of Amazon's distributed, high-throughput commit log that allows AWS teams to build consistent, transactional, distributed streaming, storage and database services at scale. As part of this team, I led parts of the API design effort and worked on integrating our APIs into the existing SDKs. This involved cross-team collaboration as part of the SDK integration and building cross-team consensus to align on our API design goals.
  - Previously, I worked on the rewrite of the distributed commit log service that is currently in use at Amazon and underpins major AWS services like S3, DynamoDB, EC2, etc. As part of this project, I integrated a high-performance telemetry framework to run as a sidecar process alongside the core log service to provide high-throughput metrics. The log service is designed to ingest data at a rate of 100s of MB/s while providing sub-10ms latency so one of the primary goals of this project were to provide high-throughput metrics without impacting core service performance.
  - Worked on improving the throughout of an internal streaming database service. By multi-threading some single-threaded components and moving memory allocations to off-heap buffers outside the JVM, I was able to improve aggregate throughput per host by 10x from 100 Mb/s to roughly 1 Gb/s while increasing connections per host to 5x the previous limit.
- **SDKs and Tools** — Jan 2018 - Aug 2020
  - Worked on AWS' internal SDK release automation platform, which was responsible for orchestrating SDK release workflows, such as linting and validating AWS service models, release schedule management and compliance with AWS API guidelines. As part of this team, I led the operational readiness and security review of the platform while also working on feature improvements.
  - Developed a feature that allowed SDK teams to customize their build system, allowing different versions of SDKs to be built on demand. For e.g., using this feature, SDK teams were able to automate the release of the PowerShell SDK (which was previously a manual process done post .NET SDK release), or provide preview/beta builds to service teams for early testing and validation before launching publicly.
- **Amazon Workdocs** — Jul 2016 - Jan 2018
  - Worked on Amazon WorkDocs' front-end team. Implemented a photo viewer to view multi-photo albums stored in users' directories, and shipped a rewrite of the user's profile page as part of the WorkDocs UI redesign.

Software Engineer, LendingHome, San Francisco, CA — Feb 2015 - Jul 2016

- Designed & implemented a framework to schedule ETL (Extract, Transform, Load) pipelines. Using this framework, we were able to improve performance of our existing pipelines by more than 100%.
- Developed a web service using Tesseract to automatically perform OCR on documents that are uploaded to the platform. The OCR-ed documents are then annotated by underwriters & auditors to speed up loan processing.

Software Engineer, Applied Intelligence, IO Data Centers, San Francisco, CA — Sep 2014 - Feb 2015

- Developed data processing pipelines using **Apache Pig** to analyze sensor data gathered from colocation centers.

Embedded Engineer, Volansys Technologies, Ahmedabad, India — November 2011 - July 2012

- Developed & maintained a **USB 2.0 (EHCI)** driver, to allow clients on a LAN to boot using an USB to Ethenet adapter, including interfacing with the **PCI** & **BIOS** subsystems in order to manage the host controller **state machine** & maintain driver compatibility with adapters from multiple vendors.

SKILLS

- Programming Languages: Comfortable with Java. Familiar with Kotlin, Rust and Python.