Vivitsu Maharaja

`<email>`: vivitsu.maharaja@gmail.com `<linkedin>`: https://linkedin.com/in/vivitsumaharaja `<phone>`: (352) 278-5449

SUMMARY

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

EXPERIENCE

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

- **Transactional Services** — Aug 2020 - Present
  - Developed a tool for generating load and writing canaries that test customer workloads for a new variant of Amazon's distributed, high-throughput transaction log. The tools capabilities include generating high load at variable tps and payload sizes, traffic shaping using statistical distributions like Poisson as well as data integrity verification using cumulative checksums.
  - Led the API integration effort a new control plane service in the existing log service's clients and SDKs. This included both designing the API, as well implementing them in the existing clients.
  - Implemented high-throughput telemetry and observability for a distributed transaction log service. The telemetry process runs as a sidecar alongside the core log service, ingesting metrics when processing data at high TPS/throughput (100s of MB/s and 10s of thousands of TPS). The telemetry framework uses a double-buffer architecture using statically allocated buffers to prevent any performance impact on the core log service's performance.
  - Improved the throughput and connection fan-out of a streaming database service by moving on-heap JVM buffers to off-heap memory, and increasing concurrency and parallism by multi-threading the fanout buffer. After these improvements, the aggregate throughput per host was increased by 10x and the connection fanout was increased by 5x.
- **SDKs and Tools** — Jan 2018 - Aug 2020
  - Led the operational readiness and security review effort for AWS' internal SDK release automation platform. This includes documenting the threat model for the platform, and identifying and driving mitigation for known operational and resiliency gaps in the service.
  - Improved the platform's workflow capabilities that allow different build systems used to build the AWS SDKs to be customized, which allowed automating releases for new SDKs, e.g., the AWS Windows PowerShell CLI.
- **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 a producer/consumer model using Celery and RabbitMQ. 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.

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