SANJAYKUMAR MUTHUKUMAR

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https://msanjay94.github.io/portfolio

Education

Master of Applied Computer Science (GPA 4.15/4.3) **December 2020**
Dalhousie University, NS, CA
Key Courses : Cloud Computing, Network Security, Serverless Data Processing

Technical Skills

Languages : Java, Python, C, JavaScript, HTML, CSS
Databases : MySQL, MongoDB, PostgreSQL
Frameworks : Spring, Struts, Node.js, React.js
Tools : AWS, Docker, Git, Hg, Jira, Linux, macOS

Professional Experience

Zoho Corporation, Chennai, India - Software Engineer **May 2016 - August 2019**

Datacenter Management Tool - Java, Spring, HTML, CSS

- Designed and implemented a module in the DC management tool to fully manage the life cycle of network infrastructure components like Load Balancers, DNS, SSL Certificates.
- The tool helped migrate the server management from AWS to the indigenous tool which helped **cut costs by 30% on Infrastructure expenses.**
- Demonstrated the deficiencies and vulnerabilities of Struts and the benefits of migrating to Spring to the CTO of Zoho, which was accepted and implemented. The migration **reduced bug bounty reports by 15%**.

Programmatic SSL Certificate purchase - Java, ACME, REST API [Git]

- Demonstrated the benefits of using Let's Encrypt's ACME to purchase SSL certificates programmatically using a PoC.
- Integrated the certificate purchase module into the DC management tool to make the entire process fully automated.
- The tool helped **reduce time consumption by 90% and increased revenue by 25%**.

R&D - Cloud Infrastructure

- Worked closely with the CTO of Zoho in analysing key technologies to improve the network infrastructure inside the data centre.
- Analysed and demonstrated technologies include : HTTP/2.0, TLSv1.3, CAA, ECDSA, Certificate Transparency, OCSP Stapling.
- **Improved page load time by 15%** by implementing HTTP/2 and TLSv1.3 support in Nginx load balancer.

Projects

Canada Tourism - Microservices based application - Java, Spring, Docker, AWS [Git]

- Designed and developed a microservices based application to demonstrate the benefits of the architecture.
- Implemented a CDN to host static resources and demonstrated the benefits of isolating static resources from dynamic endpoints - Faster page loads using cache-control headers and removing authentication / authorisation logic for static content.

Artist Classification using song lyrics - Python, NLTK, React.js

- Experimented with Naive Bayes classifier algorithm to classify artists using their song lyrics. NLTK library was used for the algorithm. The classification was performed with an accuracy of ~76%.
- Designed a visualization of the tool using React.js.
- Ongoing research to try and detect deepfake audio by applying the classifier on the utterance data of the person impersonated.