SANDHYA CHANDRAMOHAN

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EDUCATION

UNIVERSITY OF CALIFORNIA, IRVINE	**Master of Computer Science**	**CGPA: 3.60/4.00***	**Expected: Dec 2019**
INDIAN INSTITUTE OF TECHNOLOGY	**Bachelor of Technology**	**CGPA: 8.07/10.00**	**Graduated: July 2014**

EXPERIENCE

DEVOPS ENGINEERING INTERN, Tiger Connect, Santa Monica, CA **June 2019 - Aug 2019**

- Enabled real-time SLO, SLI metrics by streaming logs from the Nginx load balancer through Logstash to Kafka Topics and ingesting them into Hadoop data warehouses for persistent storage and analytics
- Reduced image cache size by 80% by enabling dynamic optimization of images on a CDN by creating an AWS Lambda @ Edge serverless function and aggregating logs via Kafka streams to the Elasticsearch server
- Formulated a migration plan and executed a zero downtime DNS provider migration writing Ansible roles
- Accomplished 100% storage-balanced Kafka partitions fetching Kafka broker and partition metrics, writing it to Zookeeper nodes and using DataDog's kafka-kit tool

SENIOR MEMBER OF TECHNICAL STAFF, Capital Float, Mumbai, India **May 2017 - Aug 2018**

- Lead Developer of Amazon Pay EMI, analogous to the Amazon.com store card in the US used by millions of users daily
- Pioneered the Publish-Subscribe Design Pattern to scale the platform, enabling it to support 10 times the existing users
- Implemented Distributed Locking using Redis NoSQL database to handle 100% of all race conditions in a multi-user web app
- Reduced deployment downtime by 100% adopting the Blue-Green deployment strategy, setting up a Continuous Integration / Continuous Delivery process in a distributed environment using Jenkins and AWS CodeDeploy

MEMBER OF TECHNICAL STAFF, Capital Float, Mumbai, India **May 2016 - May 2017**

- Spearheaded a distributed design by extracting database operations into Stored Procedures with Row-level locking
- Improved database performance by 30% and ensured 99.99% availability by setting up MySQL Master-Slave Replication
- Created a large-scale data pipeline enabling an ETL process for data transfers to a Datawarehouse
- Led to 100% real-time processing of all payments by engineering a thread-safe application, synchronizing critical operations

SOFTWARE DEVELOPER, Capital Float, Mumbai, India **May 2015 - May 2016**

- Redesigned and refactored a legacy WPF application in the Singleton pattern to a multi-tier RESTful Web Application in the MVC design pattern following Object Oriented Design principles using ASP.NET Web API 2 and the WCF Framework
- Spearheaded the Unit of Work design pattern to carry out a business operation as one atomic transaction
- Ensured fast AGILE development cycles and code robustness by integrating the NUnit Unit Testing Framework

PROJECTS

BasicOS ● Contributed to the Open Source Unix - like OS xv6's kernel ● Repository **Apr 2019 – Jun 2019**

- Implemented Unix system calls to get the memory dump, support multi-threading, mutex locking, conditional variables, semaphores and linked list file-addressing to theoretically support files of infinite size
- Developed a unix shell with IO redirection, pipes and several simple unix programs like ls, cp

RDBMS ● Multi-layer relational database with optimized index and query systems ● Repository **Oct 2018 – Dec 2018**

- Devised several join algorithms such as the Block Nested Loop Join, the Index Nested Loop Join and Sort Merge Join algorithms using the External sorting algorithm for sorting
- Built an Indexing Component via a B+ Tree supporting range predicates, managing persistent indexes over structured data

Exploits and Attacks ● SEEDLabs Security Education Labs on Ubuntu 16.04 VM ● Repository **Jan 2019 – Mar 2019**

- Attacked the environment variable and Set-UID programs, exploited the buffer overflow vulnerability and performed packet sniffing and snooping and SQL injection attacks

Algorithms & Data Structures ● Hashing Algorithms | Tree Data Structures ● Repository **●** Repository **Jan 2019 – Mar 2019**

- Formulated optimized implementations in Java and evaluated the performance of several hashing algorithms - Linear probing, Double hashing, Chained hashing, Cuckoo hashing and Tree Data Structures - Binary Search Tree, AVL Tree, Treap, Splay tree
- Implemented the methods in the IHashingAlgorithm and ITree interface respectively for each

SKILLS

- **Languages: (Over 5000 lines)** Java, C#, Python, MySQL, Ansible, Chef, Bash | **(Over 1000 lines)** C++, C, Ruby
- **Frameworks/ Libraries: (Extensive)** ASP.NET, Web2Py | **(Comfortable)** Flask, J2EE, Jetty, Jersey, Dropwizard
- **Other Tools/ Technologies: (Extensive)** AWS, Docker, Git, Redis, Kafka, Elasticsearch, Logstash
- **Relevant Courses:** Algorithms, Data Structures, Data Management, Operating Systems, Computer Security