Suvvari Venkata Sai

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Education

Indian Institute of Technology Kharagpur   *West Bengal, India*
B.Tech in Computer Science and Engineering   *Dec 2020 - May2024*

- CGPA:9.09/10
- **Courses:** Distributed Systems, Operating System, Database Management Systems, Computer Networks, Advances in Operating System Design, Programming and Data Structures, Algorithms, Computer Organization and Architecture, Probability and Statistics, Software Engineering, Machine Learning, Deep Learning, Linear Algebra for AI&ML

Work Experience

Nutanix   *Bengaluru, India*
Summer Intern   *May 2023 - July 2023*

- Spearheaded documentation for unit-tests using new mocking framework called Mocker for seamless integration for robust testing procedures.
- Collaborated closely with the team, devising guidelines that streamlined the framework's adoption for writing effective unit-tests.
- Strengthened software reliability through tailored Golang unit tests targeting legacy code that runs often, enhancing system resilience.
- Meticulously analyzed and understood code, designed tests, elevating system reliability and increased code coverage from 0.1% to 12.5%.

Nutanix   *Bengaluru, India*
Member of Technical Staff-1   *July 2024 - Present*

- Developed a Go-based tool to create OCI-format bundles of Docker images, optimizing space usage and reducing Docker registry population/updation time from 15 minutes to 3 minutes.
- Debugged and resolved issues related to `systemctl` services, unit files, service dependencies, startup conditions, and `fstab` configurations.
- Gained hands-on experience with Docker architecture, analyzing how blobs are created and stored in registries for space optimization. Explored the role of `overlayfs` in container runtime to enhance understanding of filesystem behavior.

University Projects

Scalable Database with Sharding   *January 2024 - April 2023*
Indian Institute of Technology Kharagpur

- Managed replicated shards using consistent hashing and a load balancer to effectively balance load in a distributed system environment.
- Deployed servers with replicated shards with MySQL, designating a primary server to efficiently handle read and write requests with low latency.
- Ensured write request replication on the majority of servers and maintained shard consistency using write-ahead logging and log shipping.
- Implemented a shard manager for managing servers by log shipping and it elects a new primary server through voting among servers if primary server fails.

Load Balancer using eBPF and XDP   *October 2023 - November 2023*
Indian Institute of Technology Kharagpur

- Developed a load balancer using eBPF with XDP, managing traffic distribution across multiple backend servers in a Docker-based environment.
- Implemented dynamic loadbalancing by distributing traffic by reading the TCP packets, optimizing resource utilization and minimizing delays.
- Created client and server for testing packet transmission, handling and logging, for effective monitoring and debugging of the system.

Position of Responsibility

Joint Secretary   Acted as Joint Secretary of Telugu Cultural Association for the academic session 2023-24.

Skills

Programming	Go, C, C++, Python, SQL, Javascript, Dart, Assembly, CSS, HTML, MIPS
Miscellaneous	Docker, Kubernetes, Linux, Bash, Git, Socket Programming, VSCode, Android Studio, Mockgen
Soft Skills	Time Management, Teamwork, Problem-solving, Documentation, Engaging Presentation, Leadership, Prompt Engineering

Achievements

2020	**All India Rank 841,** JEE Advanced	*India*
2020	**All India Rank 271,** JEE Mains	*India*
2020	**All India Rank 467,** KVPY	*India*
2020	**State Rank 87,** AP-EAMCET	*Andhra Pradesh*