

Manish Shambu

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CURRENT POSITION

- **Visa Inc** United States
Sr Software Engineer *July 2019 - Present*
 - **BOLTMAP**: Built an anomaly detection pipeline to detect anomalies in payment transaction failures. Complete ownership in scaling up the pipeline from 8 to 256 merchants using apache-airflow.
 - **BOLT 2.0**: Developed a federated anomaly detection data pipeline from scratch. Multiple product teams can utilise this framework to plug their data to elastic cloud for their anomaly detection needs. Onboarded more than 36 customers. Architected for exponential scaling.
 - **Auto Detection of change categories**: Developed a hybrid approach to automatically classify change incidents. Used unsupervised ML algorithms such as RAKE, YAKE for keyword extraction and NLTK extensively.
 - **Rules Engine Service**: Backend development for a self service application portal. Gives complete autonomy and control to an user to manage and control rules. Extensive usage of Drools framework.

TECHNICAL STRENGTHS

- **Languages and Libraries**: Python, Java, JavaScript, C, Go, Linux, Shell, SQL, scikit-learn, numpy, NLTK
- **Other Tools and Frameworks**: Airflow, Redis, Docker, Kubernetes, REST, Hadoop, Spark, Apache Kafka, AWS, ELK stack, Lambda, Git, Unix, Raspberry Pi, Cassandra, Flask, Jenkins, JMeter, Maven, Gradle, Solr

PROFESSIONAL EXPERIENCE

- **Oracle** Bengaluru, India
Software Developer *Jun 2015 - Jul 2017*
 - **Diameter Signaling Router (DSR)**: DSR is a signalling infrastructure used in 4G LTE networks that centralises routing, traffic management and load balancing.
 - I developed DSR's Network Function and Orchestration feature using OpenStack.
 - My primary role was to build the elastic scaling functionality, cloud deployment of DSR on OpenStack and proprietary PMAC clouds.
 - Developed north bound interfaces for DSR to ACME Packet's FCAPS capability for automated management and configuration.

SELECTED PROJECT WORK

- **Drone assisted car parking**: Simplified car parking using drones. A drone captures a snapshot of the parking space, identifies empty spaces and guides a car to the empty parking spot
- **Byzantine Chain Replication**: Architected and built a Byzantine Fault Tolerant system with $2f + 1$ replicas
- **Crash Tolerant system using RAFT**: Built a crash tolerant stack data structure using the open source RAFT based consensus
- **Big Data - Flight delay statistics**: Display flight delays while booking a flight. The delays are calculated using past data for more than 10,000 flight routes.

EDUCATION

- **University of Colorado at Boulder** Boulder, CO
Master of Science in Computer Science; GPA: 3.88/4.0 *Aug. 2017 - May. 2019*
 - Coursework: Machine Learning, Data Center Scale Computing, Advanced Algorithms, Distributed Systems, High Performance Scientific Computing, Natural Language Processing, Internet of Things
- **PES University** Bengaluru, India
Bachelor of Engineering in Computer Science; GPA: 8.44/10.0 *Aug. 2011 - July. 2015*
 - Coursework: Analysis and Design of Algorithms, Computer Networks, Operating Systems, Data Structures, Unix System Programming, Database systems