Kiran Beesanakoppa

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EDUCATION

BMS College of engineering **Bangalore , India**
Bachelor of Engineering in Mechanical Engineering *Grad : 2023*

EXPERIENCE

Mobileum India Pvt. Ltd. | Associate Software Engineer Quality : Full Time **Aug 2023 - Present**

- As a quality engineer, I thoroughly understood the test plan, test cases and test execution and implementing the test plan in a better executable way as per the requirement and had thorough understanding and knowledge on cross-browser testing, regression testing, functional testing, non-functional testing, performance testing.
- Worked extensively on containerization using Docker, Kubernetes, and OpenShift, with a deep understanding of the process, including Helm charts, YAML files, pod and secrets configuration, Kubernetes architecture, resource configuration for clusters, and interacting with AWS S3 cloud storage via AWS CLI.
- Gained expertise in Python programming for generating raw protocol stack feeds, developing performance testing scripts integrated with Robot Framework for business intelligence dashboards, processing raw feeds through Spark for real-time data handling, storing data in HDFS, and validating data compatibility with real streaming protocol stack data to check compatibility of the python script generated data with the real time data of the protocol stack.
- Worked with Robot Framework and WATF Framework to automate test cases and execute automation scripts for business intelligence dashboard testing, performance testing, data validation of ETL flows, and ensuring consistency between backend data and dashboard data and also gained the knowledge on the java programming language.
- Gained comprehensive understanding of RDBMS like PostgreSQL and Oracle, extensively using SQL for data validation, learning JDBC connections for these databases, and understanding how RDBMS can be used for lookups when connecting through Spark for real-time and batch data processing.
- Explored shell scripting for basic tasks and automation in Linux, gaining knowledge of Linux operating systems and essential commands to interact with and manage the system.
- Hands-on experience with Prometheus involves using it as a metric scraping software that collects API performance metrics at regular intervals. Once the metrics are available in Prometheus, we can query them to verify whether the API metrics are being collected properly.
- Hands on Spark Bloom metadata which optimizes query performance by using Bloom filters to minimize data scans, enhancing efficiency in Presto queries. In data testing while enabling Bloom filters on high-cardinality columns (e.g., imsi, msisdn) ensured faster lookups while reducing I/O overhead. However, it adds metadata overhead, impacting ORC file size and Spark job write times. gaine experience on tetsing verifying query execution time improvements, assessing metadata size impact, and analyzing false positive rates. Proper tuning of the false positive probability (FPP) is essential for accuracy.

PROJECTS

Wholesale Business Advisor

- This project was the telecom billing product which focused on analyzing roaming partner agreements to provide insights into customer satisfaction and identify partners with whom new or improved deals would be beneficial and also provided the future predictions about which roaming partner agreement would be more beneficial.
- Had the privilege of working on batch processing of telecom CDR files using Spark, storing the generated output in HDFS, and validating usage and billing charges to ensure accuracy based on the customer's actual usage.
- worked on a forecast model that predicted roaming partner usage and billing charges for upcoming months and years and validated its accuracy in forecasting future usage and billing correctly.

Roaming Customer Experience Management

- This project involves handling raw feeds from protocol stacks like SS7 and DIAMETER, where Spark performs real-time transformations on the raw feeds to generate output. Subsequently, Spark executes batch processing on this output, producing further results. These results are aggregated and processed using key performance indicators to create business intelligence dashboards, providing insights into customer experience with roaming partners. This enables customers to strategize and optimize their plans and roaming agreements.
- In this project, I thoroughly worked on end-to-end testing, starting from real-time processing of raw feeds through Spark jobs, understanding transformations and actions, and validating the output. I verified source-to-target mapping using SQL queries and validated data consistency between streaming outputs and batch-processed outputs. Additionally, I gained exposure to Hive and Presto query engines for fetching data from HDFS to business intelligence dashboards. Lastly, I extensively validated the dashboards against key performance indicators and business requirements.
- In this project, I extensively worked on generating raw feeds using Python and shell scripting, modifying and redesigning data through Spark scripts, and using Spark SQL for data analysis and validation. I also worked with RDBMS like PostgreSQL and Oracle, NoSQL databases like HBase, and validated data using SQL queries. Additionally, I gained a deep understanding of Hadoop architecture, Cloudera platforms, ETL and big data analytics.
- I also gained experience in containerization technologies like Docker, Kubernetes, and OpenShift for delivering products to end customers. Additionally, I had some exposure to AWS services, including AWS Client and AWS Storage, used as the storage platform.

Customer Relationship Management and single quality and single service quality Indicators

- CRM provides detailed information about individual subscribers of roaming partners, including their usage of calls and data services, transactions in roaming countries, the number of countries and partner networks they have roamed and latched onto, as well as their experience on those partner networks.
- Worked on end-to-end validation of CRM, including processing raw feeds via ETL streaming, analyzing data for customer requirements, validating data which is stored in HDFS and in CRM UI testing API calls with Postman, performing functionality testing, conducting performance testing using Python automation scripts, and extensively utilizing PySpark for data generation and modification and containerization of this module.
- Single Quality and Service Quality Indicators provide insights into customer experience with roaming partners through scoring patterns based on complex logic, helping assess subscriber experience, identify the most beneficial roaming partners in terms of revenue, and enhance customer satisfaction.
- Worked on end-to-end validation of the above-mentioned module including processing raw feeds via ETL streaming process and analyzing the calculations happening behind the score calculation and validating each score thoroughly as per the calculation logic involved and certifying that the score calculated through the etl process is exactly as per the calculation logic and ensuring the complete thorough testing of the module and also worked on the containerization of this module.
- gained a strong understanding of stateful and stateless jobs in Spark, focusing on practical scenarios with real streaming data. I explored the concepts of checkpoints, offsets, commits, and data sources, developing a deep comprehension of Spark's state management. Additionally, I learned about the watermark model, which aids in maintaining state, clearing it efficiently, and optimizing memory usage to prevent executor overload. I also grasped why event-dropping is essential in the watermark model and how it ensures system performance. Furthermore, I studied different output modes like append, update, and complete, understanding their roles in processing and state management.
- Hands-on experience with Prometheus involves using it as a metric scraping software that collects API performance metrics at regular intervals. Once the metrics are available in Prometheus, we can query them to verify whether the API metrics are being collected properly.
- Hands on Spark Bloom metadata which optimizes query performance by using Bloom filters to minimize data scans, enhancing efficiency in Presto queries. In data testing while enabling Bloom filters on high-cardinality columns (e.g., imsi, msisdn) ensured faster lookups while reducing I/O overhead. However, it adds metadata overhead, impacting ORC file size and Spark job write times. gaine experience on tetsing verifying query execution time improvements, assessing metadata size impact, and analyzing false positive rates. Proper tuning of the false positive probability (FPP) is essential for accuracy.

Technical SKILLS

Programming Languages : Python, Java

Scripting : Shell scripting, PySpark (Spark SQL)

Databases : Oracle, Hive, Postgres, SQL, HBase

Tools : Postman, Presto, AWS CLI, DBeaver, PgAdmin, Hue, Oozie,Prometheus,Git,GitHub,Jenkins

Platforms : Visual Studio Code, Eclipse, PyCharm, DataBricks, RAID, IMAS

Test Management : Jira, Xray

Containerization : Docker, Kubernetes, OpenShift

Frameworks : WATF (Selenium WebDriver), Robot Framework, Cloudera, Acceldata