Vijay Kumar

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Education

Indian Institute of Technology, Delhi 7.03
Bachelor of Technology in Electrical Engineering *July 2019 – April 2023*

Vidhur Navodya Sr Sec School, Kota 87.00 %
Class XII *April 2017 – April 2018*

Work Experience

Software Engineer | *Jio Platforms Limited, Mumbai* Aug 2023 - Present

Extract Transform Load Tool

- Designed and Implemented an iteration mechanism that reduced plugin usage in the pipeline by 23%
- Developed recursive join/union/intersection functions enabling reading from multiple databases in a single job, leading to 100% replacement of custom jobs and improved automation resource utilization.
- Built connectors for Azure, GCP, and AWS S3 as data sources and sinks, enabling multi-cloud integration and expanding platform capabilities

Spark Libraries and Kubernetes Jobs

- Developed Spark streaming classes for near real-time data processing, reducing latency from minutes to seconds for live data streams
- COptimized Spark job configurations using YAML in Kubernetes by tuning driver/executor memory and leveraging dynamic resource allocation, improving resource efficiency by 30%
- Utilized Spark Session APIs for data parsing, filtering, SparkSQL queries, and repartitioning to enhance processing throughput and scalability

Neo4J Graph Database

- Modeled a topological graph with property-rich nodes and relationships using Cypher, supporting complex queries and data relationships
- Improved Spark job performance by 70% via deployment on Kubernetes, surpassing legacy Python jobs in processing speed and stability
- Tuned Spark SQL aggregations, enabling processing of 20M+ records/day with high throughput and low latency

Light Weight ETL

- Designed a client-side ETL module for low-volume data processing, reducing resource consumption by 35% and removing dependency on dedicated scrapping clusters
- Configured and deployed data pipelines with the new module, increasing maintainability and client usability
- Conducted end-to-end testing, benchmarked local and cluster environments, integrated logger and config refresh features, and fixed critical bugs to ensure robustness

Projects

Dynamic Memory Allocator | *Prof. Rahul Garg* | *Course Project* Dec 2020 – Jan 2021

- Implemented a JAVA memory management system using linked lists and trees for dynamic allocation/freeing
- Developed a Doubly Linked List with First Split Fit algorithm to track memory blocks efficiently
- Engineered a Best Split Fit algorithm that reduced memory fragmentation by 15% and improved allocation/free speeds by 20%, enhancing system stability

Graph Topology Analysis | *Prof. Rahul Garg* | *Course Project* Dec 2020 – Feb 2021

- Built a bi-directed graph from CSV files capturing storyline data of Marvel characters
- Implemented DFS to extract independent storylines, leveraging HashMap and ArrayList for efficient traversal and storage

Technical Skills

Languages: C++, Scala, Java, Python, SQL, Cypher

Softwares, Libraries, Tools and Frameworks: Spark Core, Spark SQL, Spark Streaming, Neo4J, SQLDeveloper, Kubernetes, Kafka, Elastic Search, Git/GitHub, VS Code, IntelliJ, MATLAB, Overleaf, Microsoft Office