Sourabha Bharadwaj BM

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Work Experience

D. E. Shaw (Data Warehouse and Analytics Team) **Bangalore, India**

Member of Technical Staff *May 2021 – Sept 2023*

- Effected **50%** query-size reduction for data scientists by designing a **Kimball dimensional model** based star-schema in **SQLServer** for **7** scattered Human Capital (HC) datasets covering applicants, compensation, employment and attrition
- Migrated **15 high-impact** manual reports (clients being the **leadership teams** at **New York** and **Hyderabad**) to real-time dashboards with **absolute 0** error across **20+** metrics by implementing **ETL pipelines** in **Java Spring Batch** and **Java Spring Boot** and proprietary **Python** infra, culminating in a unified, secure, and resilient data warehouse (DWH)
- Setup ETL **monitoring alerts**, data access audits, and **data integrity checks** using proprietary **Python** infra to ensure high data quality and accuracy of the warehouse data
- Improved data transfer times by **80%** by implementing **GraphQL** APIs in **Java** and providing access to other teams via **GraphQL Playground**, alleviating data access barrier for data analysts and other dashboard developers
- Integrated **Prometheus** metrics and **Grafana** dashboard to monitor **REST** API performance. Optimized the API performance by adding a caching layer using **EH Cache**
- Implemented custom, role-based access control system (**RBAC**) for backend data APIs to ensure authorized data access. Provided a **self-service** interface for authorized teams to manage data access
- Setup backend system infra such as CNAMEs, **Kerberos** certificates, Active/Passive Load balancers, and **CRON**s to host the team's DWH application on dedicated, restricted, high availability (**HA**) **Linux servers**
- Customized the **Jenkins CI/CD** pipeline and deployed on the internal cloud with a suite of unit tests covering **functional tests** and **data quality** checks to ensure exhaustive pre-release testing
- Spearheaded the design, discussions, planning, and development of **2 high-impact** data and visualization-intensive analysis tools built using **React/Redux**, **Highcharts**, and **Pivot tables** in **JavaScript** for leadership teams and firmwide HC teams to make impactful, data-driven decisions in the firm's employment and attrition processes
- Optimized the statistical algorithms serving computations behind the existing dashboards, reducing dashboard load-times by **50%** and data-transfer size by **30%**, fast-tracking the hiring decisions across the firm
- Integrated an internal **database versioning** tool enabling seamless monthly releases with hassle-free rollbacks
- Proposed adoption of **Apache Spark** to enable quicker load times of data and computation-heavy analysis tools, and Machine Learning (**ML**) based reporting for certain HC reports

Summer Intern *Apr 2020 – June 2020*

- Built GraphQL APIs and customized **chart-integrated Pivot tables** to enable seamless analyses over a large feature set of around **100** features in combined applicant and employment data
- Implemented **recursive GraphQL data-flattener** and **query constructor** algorithms to make the analysis tool GraphQL schema-agnostic
- My internship experience was featured as a LinkedIn post

Education

Indian Institute of Technology (IIT) Bhubaneswar **July 2017 – July 2021**

Bachelor of Technology (Honors) in Computer Science and Engineering, CGPA: ***9.31/10.0*** *Bhubaneswar, Odisha, India*

Technical Skills

Languages: Java, Python, C++, JavaScript, SQL
Technologies/Frameworks: Linux, Contiki-OS, Spring Batch, GraphQL, Jenkins, React/Redux, TensorFlow, Git

Scholastic Achievements

- Scored **10/10** CGPA in the 2021 Spring (8th) semester at IIT Bhubaneswar in a batch of **60** CS students, *2021*
- Ranked **1764** out of **1.2 million** contesting candidates in **JEE Advanced** examination, *2017*
- Ranked **7** out of **200,000** contesting candidates in **Karnataka CET** (Engineering entrance) examination, *2016*

Technical Conference Publications

Concurrent Transmission for Multi-Robot Coordination **RoboCom, CCNC 2022**

Sourabha Bharadwaj*, Karunakar Gonnabathula, Sudipta Saha, Chayan Sarkar, Rekha Raja* *Las Vegas, USA*

- Proposed and implemented a novel split architecture implemented in **C/C++** to enable precise and efficient computation and communication in a low-resource and decentralized multi-robot setup
- Won the **Best Paper Award** with a cash prize of **1000€** sponsored by *TII, Abu Dhabi* and featured articles on TechXplore and NewsAzi