

Saket Trifale

Software Engineer

Website: saket-sudo.github.io | Email: saket.trifale@gmail.com

Senior Software Engineer experienced with software development life-cycle from architecture designing, development, infrastructure architecture to deployment. Three years of experience of handling and leading multiple projects from initial concept to product launch phase. Experience with data science, software product development and hardware networking.

Academics Experience

Rochester Institute of Technology, Rochester, NY, United States (Dec 2019)

Master of Science, Major: Telecommunication Engineering Technology

University of Pune, Pune, MH, India (May 2015)

Bachelor of Engineering, Major: Electronics and Telecommunications

Skills

Technologies:	Python(scikit-learn, Numpy, pandas, NLTK, TensorFlow, PyTorch), SQL, Apache Spark, Apache Hadoop
App Development tool:	Django framework, Flask Framework, PySpark, RestFUL API, LLM, Snowflake, FAST API
Database & storage:	Azure SQL, PostgreSQL, MySQL, Azure Blob storage, Azure Synapse, Azure Purview, Azure Data Lake, AWS S3
Deployment:	Linux, Kubernetes, Docker, Jenkins
Platform & cloud services:	Linux, AWS, Azure

Certification

- AWS Certified Solutions Architect – Associate (June 20, 2022)

Work experience

Software Engineer, Rubiscape, Pune, MH, India

(Oct 2022 - Present)

DaaS (Data as a Service) Application (Back-end Team Lead)

Project summary - Platform exclusively designed and developed for Bajaj's Senior & Top management level. Management Information Systems (MIS) is integrated with home grown ERP systems and cloud service of Azure synapse, Azure purview to this platform for critical analysis & decision making to simplify the process and gives an overview of the data consumption to the stakeholder.

- Gathered and translated business requirement to technical requirement
- Design & architecture - Structural design of the database and code architecture. Designed back-end architecture and API flow process using django rest framework
- Infrastructure - Integrated Synapse database with the application (angular and django application), where the portal acts as a data governance. The portal connects with the internally managed database and Synapse database
- Data exploration & reconciliation - Using cloud services of azure synapse pipeline and azure functions reconciled the data maintaining the schema of the entity and cleaning the data
- Data Quality Management - Using pyspark as dataframe engine parsing the data to extracting meaning insight from the reconciled data with parameters like consistency, accuracy, completeness, availability, orderliness, uniqueness
- Data visualization - Built a Power BI dashboard for the business & portal essential KPI using the DQM and reconciled data and present to the stakeholder (MIS department)

Product Summary - Rubiscape provides a comprehensive suite of data science products designed to empowering at every stage of the data science life-cycle. From data visualization to data engineering and everything in between, Rubiscape offers the tools that needs to transform data into actionable insights. It is a one stop shop for all the data science needs. Clientele for this product is in India and Europe, some of the prestigious clients are DRDO, Magna, HP, Thermax, Honeywell, JNPT etc..

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Rubiscape R&D features:

- R&D feature requested by European Clientele
- Gathered and converted business requirement to technical requirements
- Researched, validated & verified by implementing POCs
- Designed, developed and integrated with Rubiscape product.

Conversation AI *(R&D feature - Individual Contributor)*

Interactive AI to have a conversation about the datasets, dashboards & models within the workspace with natural language processing and large language models.

- Developed and implemented conversational AI models using advanced Natural Language Processing (NLP) techniques with data preprocessing, model training, hyperparameter optimization
- Used LLMs to interact and contextual continued conversation with the pre-trained model
- Integrated the conversational AI with Rubiscape, with feature of interacting with user-defined dataset & dashboard in the product

Spark Feature Integration *(R&D feature - Sole/Individual Contributor)*

Utilizing the Apache Spark engine to service the data engineering needs in the product with focus on distributed work load and batch processing

- Integrated and designed Spark master slave cluster in Rubiscape (data science product) to allocation of task & work flow to improve the quality and execution
- Deployed and setup a highly customizable spark cluster to execute task and Redis to manage task queue sequentially
- Developed and implemented code to reliably communicate task info and environment parameter between Rubiscape and spark cluster
- Built multiple test showcase of DecisionTreeClassifier, RandomForestClassifier, RegressionEvaluator leveraging the batch processing of RDD to exemplify spark as a star feature of Rubiscape

Kubernetes Executors *(R&D feature - Sole/Individual Contributor)*

Modified kubernetes service from application load balancing to handle the execution task of Rubiscape for improving the speed and compute resource consumption

- Architecture - Structural design of components (like Websockets, Kubernetes control plane, communication channel) and code architecture
- Infrastructure - dockerization of other associated service and yaml file and pod images that kubernetes requires
- Design - custom wrapper for kubernetes packages to trigger, execute and logging and designing the control plane for the custom needs
- Test cases - Automated test case execution speed and integrity of the data processed by the executor

Rubispace product development:

Rubiscape Product Enhancement *(Team Contributor)*

- Working as a team member for RAAR(Run At A Release), this team facilitates the needs/wants from client
- Interacting with the client like DRDO, Magna, HP, Thermax, Honeywell, JNPT to address the issue faced, gathered requirement and appropriate task planing
- Handle and delivered Product release multiple releases, patch & hot-fix in a short period of time

Automated CI/CD pipeline for Rubiscape *(Individual Contributor)*

- Requirement gathering - translated the tech stack need to run the application and define a strategy and process flow of the automated pipeline
- Infrastructure - microserviced the application through dockerising every service in respective containers

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- Design - Custom trigger for the pipeline and docker building process with rollback and monitoring the status of the pipeline
- Test cases - running the test cases defined, reporting the health of the application

R&D Engineer, John Bean Technologies, Kingston, NY

(May 2019 – Apr 2020)

- Led the designing and verification of the high-powered RF subsystem
- Data acquisition and data modelling & fitting to multiple EM and power transfer equation
- Trained supervised & unsupervised learning models to identify relationship between the data
- Interfaced with various third-party customers/clients and tailored project objectives and requirements

RF Consultant, Carestream Health Inc, Rochester, NY

(Sept 2018 – Dec 2018)

- Designed a novel dual band (2.4Ghz and 5.0Ghz) patch antenna for medical network system using Ansys HFSS
- Improved the bandwidth, radiation pattern and S parameters over conventional baseline

Teaching Assistant Rochester Institute of Technology (PHYSICS Course & NETWORKING Course)

(Aug 2017 - Dec 2018)

- Teaching assistant for physics-Electromagnetism, Optics course & networking technologies course handling multiple session with 40 students
- Conducted lab and classroom session teaching with emphasis on EM suites
- Conducted hardware lab session for various configurations of routers and switches