

Subhas Rayala

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Summary

Experienced Industry 4.0 and MES Engineer with oil and gas domain expertise, process engineering background, and hands-on experience in digital transformation, data analytics, and ML model development, driving improvements in manufacturing performance and operational decision-making.

Professional Experience

Jaaji Software Technologies Pvt Ltd – Solution Delivery Engineer

Hyderabad | Mar 2025 – Present

Client: Dorf Ketal – Speciality Chemicals

- Configured digital manufacturing modules (e-BMR, LIMS, digital logbooks, KPIs, Smart Trends) to replace manual processes using inSis(Industrial Smart Information System) Suite.
- Designed and implemented client-specific digital manufacturing solutions on the inSis platform, aligned with operational and business requirements.
- Supported IIoT-based integration of MES with ABB and Yokogawa DCS, enabling data flow to Historians and cloud-enabled systems using OPC UA and other industrial communication standards.
- Supported FAT, UAT, SAT, go-live and stabilization of plant-wide digital systems.
- Worked in alignment with 21 CFR Part 11, ISA-88/95/106 and IEC-62443 standards, with hands-on exposure to industrial cybersecurity and secure IT/OT network practices.
- Performed industrial data validation and quality checks across MES, Historian, and enterprise systems using SQL, ensuring data reliability for analytics and reporting.
- Tested and supported mobile applications and delivered on-site training to field operators.
- Prepared periodic operational and OPC connectivity reports, and led regular client review meetings to track progress, resolve issues, and ensure stakeholder alignment.
- Currently leading end-to-end project execution for MES configuration, coordinating with process, quality, operations teams, and plant leadership to translate requirements into software specifications and ensure on-time delivery.

Client: Dodla - Dairy Manufacturing

- Led LIMS (Laboratory Information Management System) rollout across 9 dairy plants.
- Gathered business and laboratory requirements, translating them into functional and technical specifications for MES/LIMS workflows.
- Managed application deployments, patch upgrades, backups, system health checks and service monitoring using IIS and Windows Services.
- Led on-site stakeholder interactions to capture analytics requirements and drive data-backed process improvement initiatives within dairy manufacturing operations.
- Designed an analytics workflow by evaluating asset-wise deviations, deviation reports, and identifying process gaps; recommended process improvements using Cp, Cpk, Pp, and Ppk capability indices.
- Provided end-to-end project coordination, status reporting, client communication, and configuration support for change requests to ensure smooth solution delivery.

Toyo Engineering India Pvt Ltd - Process Engineering Intern

Mumbai | Dec 2022 – Feb 2023

- Assisted in the Vacuum Distillation Unit (VDU) expansion project through line sizing, pump hydraulics calculations, and heat exchanger datasheet preparation.
- Reviewed engineering documents including PFDs, P&IDs and Control Philosophy documentation.
- Prepared commissioning documentation and line-listing files supporting project execution.

Indian Oil Corporation Ltd – Data Analysis Intern

Mathura | June 2022 – Sept 2022

- Performed Time-Series Analysis on five years of refinery plant data to identify operational trends and performance deviations.
- Cleaned datasets using Excel and VBA Macros, resolving shutdown periods, anomalies, and outliers.
- Automated heat exchanger fouling analysis model with graphical reporting.
- Developed dashboards and automated visualization reports for senior leadership decision-making.

Institute of Chemical Technology – Machine Learning Intern

Remote | Jan 2020 - April 2020

- Preprocessed image datasets and evaluated ML models such as SLM and Neural Networks, achieving 80% accuracy in image classification.
- Applied statistical analysis techniques and model tuning to enhance predictive performance for business intelligence applications.

Personal Projects

Local PDF Chatbot (RAG + Ollama)

- Developed a local RAG-based chatbot capable of PDF knowledge retrieval using Ollama models.
- Implemented reranker logic for relevance scoring and integrated OCR for image-based extraction.
- Designed an interactive Streamlit UI for user testing and demonstrations.

Credit Card Financial Dashboard (Power BI + SQL)

- Built a SQL-integrated Power BI dashboard for real-time financial KPI monitoring.
- Optimized data models and DAX calculations to improve dashboard accuracy and responsiveness.

Disease Prediction Algorithm

- Executed ETL workflows on clinical datasets and evaluated multiple ML models.
- Achieved 98% accuracy in cardiovascular risk prediction after hyperparameter optimization.

Email Spam Detection System

- Implemented Count Vectorizer-based text feature extraction and supervised ML models.
- Optimized models using GridSearchCV achieving over 90% accuracy.

Skills

MES & OT: inSis Suite, MES Systems, IT-OT Integration, OPC UA, PLC, SCADA/DCS, Modbus, SQL (MS SQL Server, Oracle TOAD), MatrikonOPC, IIS Administration, Windows Services, Event Viewer.

Data & ML: Python, Machine Learning, Power BI, RAG, Microsoft Excel, Power Point, Word, Minitab.

Dev & Tools: .NET Environment, HTML/CSS/JS, VS Code, Docker, RESTful API, NoSQL.

Other Softwares: Aspen Hysys, HTRI, Adobe Products.

Education

Institute of Chemical Technology, Mumbai Indian Oil Campus Bhubaneswar - **CGPA 8.42/10**
Integrated Masters (Btech+Mtech) in Chemical Engineering |Minor in Petrochemicals | 2019 – 2024

Awards

- ❖ Quick Learner Award FY2025-26 – Jaaji Software Technologies Pvt Ltd