Ritesh Somashekar

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Summary

A pragmatic Machine Learning engineer with four years of experience in delivering elegant solutions to complex data challenges and automating end-to-end process workflows to enhance operational efficiency and data-driven decision-making.

Education

George Mason University(GMU) *Aug 2023 – May 2025*
MS in Data Analytics and Engineering, GPA:3.93/4.0
Related Courses: Data Analytics, Business Analytics, Data Mining, Viz using Tableau & Power BI, Advance Machine Learning, Neural Networks, Natural Language Processing, Applied Statistics

Experience

Machine Learning Engineer – Healthcare Insights & Automation *Bangalore,India*
Carelon Global Solutions (Elevance Health) *May 2022 – Aug 2023*

- Designed and optimized **20+ ML-ready data pipelines** for provider and consumer analytics, focusing on claims balancing workflows and scalable model input generation.
- Used **Python and Airflow with CI/CD-integrated frameworks and AWS services** to enhance pipeline reliability and data processing efficiency.
- Developed **Python-based automation** workflows to ingest data from NPPES repositories and improved ML data **accuracy by 74%**, reduced processing overhead, and enhanced model quality.
- Built intelligent **web crawlers and structured 400,000+ healthcare XML/JSON documents** for supervised learning. Engineered **advanced SQL and DAX-based feature pipelines—boosting model training efficiency by 60% and cutting preprocessing overhead by 70%.**
- Created ML-powered **Tableau and Power BI dashboards** to surface predictive insights and support anomaly detection for performance drift in model behavior.

Machine Learning Associate – Healthcare Insights & Automation *Bangalore,India*
Carelon Global Solutions (Elevance Health) *October 2020 – Apr 2022*

- Collaborated with cross-functional teams on the **Seven Plus Locations project** to design business-aligned data pipelines, improving **reporting accuracy and data-driven decision-making**.
- Developed a **Python-based** ingestion **workflow for NPPES data**, enhancing ETL efficiency and improving **claims data accuracy by 74%, directly impacting BI insights quality.**
- Automated medical invoice classification using rule-based scripting, **reducing manual error rates by 70%** and optimizing business operations.

Additional Experience

Graduate Research Assistant *Fairfax, VA*
Costello College of Business - GMU *August 2024 – Present*

- Designed **Python and R-based algorithms** to **investigate social cohesion and community coping** behaviors **during disaster scenarios** using large-scale real-world datasets.
- Leveraged **graph-based analytics** to uncover pattern insights and utilized ensemble models to forecast trends by running jobs **on ORC Hopper clusters**, achieving an **RMSE of 0.89**.
- Visualized findings using **R and Tableau** to support the use-case and Research goals. Rendered the same on OpenCV reports.

Technologies

- **Programming Languages:** Python, SQL, R, Scala
- **Machine Learning & AI Frameworks:** Scikit-learn, TensorFlow, PyTorch, XGBoost, LightGBM, Transformers (HuggingFace), SecureGPT, LLaMA
- **Data Engineering & ML Tools:** Databricks, Apache Airflow, Snowflake, AWS (S3, Lambda, Athena), Kafka, Kubernetes, Git, Jupyter, PySpark, Selenium
- **Data Analysis & Visualization:** Pandas, NumPy, Tableau, Power BI, Excel (Formulas, VBA)
- **Techniques:** Supervised/Unsupervised Learning, Time Series Forecasting, A/B Testing, Model Evaluation (RMSE, MAE), Feature Engineering, Data Preprocessing, Model Deployment, CI/CD, Statistical Analysis

Projects

Agentic AI-Based Ticket Automation System | Agentic AI |SecureGPT | AWS | JIRA |NIST Compliance | Agile

- Developed an **agentic AI system using SecureGPT with LLaMA to autonomously monitor cybersecurity threats** and generate JIRA service tickets, ensuring compliance with SLA and NIST-CSF frameworks.
- Simulated cross-agent ticket lifecycle (JIRA, ServiceNow) **with 93% automation accuracy, reducing manual ticket triage time by 70% and response delays by over 60%**.
- Delivered a secure, modular backend integrating event queues (AWS SQS), secure data handling, **and LLM prompt engineering, achieving a 50% improvement** in response scalability and system robustness.
- Enabled CSV-compliant validation of AI-driven event handling, cutting o**perational risk by 40% and aligning the automation pipeline with enterprise audit requirements**.
- Used **LLaMA's contextual reasoning** to classify and rank events, boosting AI accuracy and reducing false positives.