Rahul Singh

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Professional Summary

Dynamic Data Science Engineer with **3+** years of experience creating scalable AI/GenAI solutions, refining **ETL workflows**, and deploying machine learning models in cloud-based ecosystems. Proficient in **Python**, **SQL**, machine learning, and AI frameworks, with a strong track record of delivering actionable insights and transformative solutions. Enthusiastic about applying Generative AI **(GenAI)**, cutting-edge algorithms, and cloud technologies to tackle challenging business problems and drive operational excellence.

Experience

Data Science Engineer Aug 2023 – Present
Public Consulting Group *Harrisburg, PA*

- Designed AI solutions using **TensorFlow** and LLMs like **GPT** and **BERT** for text summarization, sentiment analysis, and enterprise applications, improving operational efficiency and reducing manual analysis time by **40%**.
- Developed retrieval-augmented generation (**RAG**) pipelines leveraging **Qdrant DB**, enabling vectorized data retrieval and seamless integration for AI-driven workflows.
- Built a pipeline for a centralized BI visualization tool to monitor various healthcare programs and intervene with the least efficient members(customers), resulting in a **20%** reduction in the effort required from team members.
- Responsible for taking the ownership of the project, assessing the existing work, and recommending insights to identify customer's purchase behavior in various markets to increase the business revenue by **30%** by using the **Light-GBM model**.
- Developed and evaluated **Logistic Regression**, **XGBoost**, and SVM models, achieving **92%** accuracy in predicting order processing issues. Insights from the models helped resolve three critical bottlenecks, improving customer service efficiency by **20%**.
- Orchestrated machine learning model deployments using **AWS SageMaker** for real-time inference, **AWS Lambda** for serverless scalability, and Step Functions for workflow automation, reducing deployment time by **25%** and enabling seamless integration into production systems.

Data Science Research Assistant Aug 2022 - May 2023
Gannon University *Erie, PA*

- Analyzed predictive models using deep learning and feature engineering, achieving **95%** accuracy across organizational verticals while reducing data redundancy by **20%**.
- Implemented GAN architectures, including LSRGAN and WGAN, for zero-shot classification and recommendations, achieving top-1 accuracy of **0.64** and precision of **0.53** on datasets with **40K** seen and **10K** unseen classes.

Data Scientist July 2019 - May 2021
Make My Clinic Pvt Ltd *India*

- Led quality assessment on **9M+** clinical records, identifying **150+** anomalies and automating validation with SQL and SAS macros, improving data accuracy by **50%** and halving project time.
- Designed survival analysis models **(Kaplan-Meier, Cox)** in Python, **SAS**, and **SQL**, creating reports on treatment patterns and survival rates for **10K+ patients**, boosting study efficiency by **15%**.
- Applied statistical modeling, hypothesis testing, and sampling theory to evaluate model performance and design experiments, contributing to data-driven decision-making and effective A/B testing for model optimization.

Technical Skills

Languages: Python, SQL (Postgres, Snowflake), NoSQL(MongoDB, DynamoDB, Cassandra) JavaScript, R
Big Data & Analytics: Big Data & Analytics Tools: Hadoop, PySpark, Spark, Hive, Databricks, Informatica, Airflow, Informatica PowerCenter, Data Stage, Tableau, Power BI, SSIS, SAS
Libraries & API: TensorFlow, Pytorch, Boto3, Pandas, NumPy, Spark, AWS Wrangler, AWS Glue, AWS Redshift, XGBoost, OpenCV, Keras, MapReduce, Scikit-learn, NLP, SVM, Logistic Regression, Neural Network, LightGBM, Gradient Boosting, CNN, LSTM .
LLMs & tools Knowledge: Llama(2,3.1,3.2), Gpt-4o, BERT, Claude 3, PaLM 2, Davini003, Mistral AI, Gemini
Cloud & Technologies: AWS(EC2, S3, Redshift, Cloudfront, IAM), Azure, Git, Docker, Kubernetes, ML Flow, Splunk
Monitoring & CI/CD: AWS CloudWatch, Elasticsearch, Jenkins, CI/CD, AWS CodePipeline, Github Actions

Education

Gannon University Erie, PA
M.S. Computer Information Science *Aug 2021 - May 2023*
Mumbai University Mumbai, India
B.S. Information Technology *June 2016 - July 2019*

Projects

Automating Patch Set generation from code review comments using LLM - LINK 2020 – Present

- Designed an automated patch set generation system using **GPT-4** and **Llama 3.2**, leveraging **Qdrant DB** for vectorized storage and retrieval to improve code review efficiency. Conducted in-depth research on Apache projects, including Kafka, Spark, and Airflow, to ensure real-world relevance and scalability
- • Built retrieval-augmented generation (RAG) workflows by embedding large text corpora and vectorizing GitHub pull request data with Qdrant DB, enabling AI-driven code analysis with over **80%** similarity to human-generated reviews and enhancing integration with real-world open-source systems.

Common defects in modern Web browsers by KE to LLM - LINK Dec 2022 - May 2023

- Leveraged Selenium to scrape large datasets (**6M** from Firefox, **8M** from Chrome) and applied NLP, SQL (**1,000+** queries), and GPT-4.o to analyze defects, achieving a high precision and recall rate with an F1 score of **94.63%**
- Analyzed **370K+** Firefox and **143K+** Chromium bugs, identifying defect-prone components and high-effort issues using agile methodologies and NLP models like BERT. Improved bug-fixing prioritization by **30%**, boosting browser stability, reducing debugging time, and enhancing both user experience and developer efficiency.