Prateesh Reddy Patlolla

Data Scientist / ML Engineer

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SUMMARY

- Experienced Data Scientist/ Machine Learning Engineer with over 3 years in operations research, building customer-facing products using data extraction, modeling, and cloud-based machine learning solutions using AWS and Azure. Proficient in full ML lifecycle management, including proof-of-concept development, model building, deployment, and monitoring.
- Proven expertise in predictive modeling, demand forecasting, mathematical optimization, and operations research in a large-scale corporate environment. Adept in building scalable data pipelines, deploying ML models, and writing advanced SQL in Oracle DB, Redshift, and other databases.

SKILLS

Languages: Python, R, Java, JavaScript, SQL, SAS
Cloud Technology: Amazon Web Services (AWS), Azure
Visualization Tools: Tableau, Power BI, AWS QuickSight
Database: SQL Server, MySQL, PostgreSQL, Oracle DB, MongoDB
Other Tools: Git, Apache Spark, CI/CD with Airflow, Jenkins, Github Actions
Operating System: Windows, Linux

EXPERIENCE

Toyota North America, Plano TX
Data Scientist II

Feb 2023 – Present

- Spearheaded a $150 million annual optimization initiative, from designing architecture and proof-of-concept (POC) to deployment, significantly enhancing Toyota's supply chain operations by incorporating demand forecasting and predictive analytics.
- Led the development and deployment of ML pipelines using AWS SageMaker, CloudWatch, and Airflow for automation and real-time monitoring, reducing manual intervention and operational costs.
- Advanced proficiency in Generative AI technologies, showcased by building 'AskToyota', an internal tool powered by a trained LLM, improving productivity across departments.
- Built large-scale decision optimization for Annual Planning of Toyota Manufacturing plants using constrained linear programming with gurobipy to streamline supply chain decisions, reducing costs and improving efficiency across the board.
- Applied causal inference methods and AB testing to evaluate models impact, developed KPIs using these results that helped make informed business decisions and resulted in 20% additional conversions.
- Developed advanced SQL solutions for Oracle DB and Redshift, optimizing large-scale data processing and analytics, and improving data retrieval speeds by 30%.

Amazon Alexa AI, Santa Barbara CA
Data Scientist Intern

May 2022 – Aug 2022

- Improved the Alexa categorizer model by utilizing AWS Glue for data extraction and feature engineering, which enhanced prediction accuracy for low-frequency queries.

- Led the development of stratified sampling techniques to reduce the Confidence Interval, providing actionable insights into Alexa's performance, and leading to improved user satisfaction.
- Created a dashboard using AWS QuickSight for historical analysis of Alexa's success rate, which was adopted as a primary reporting tool in Alexa's weekly business webinars.

Cyient Ltd, India
Data Scientist

Aug 2019 – Dec 2020

- Extracted road sign boards through object detection from terrestrial imagery to minimize manual efforts of data annotation for North American-based clients.
- Achieved a hit rate of 92%, resulting in a saving of 12 FTEs.
- Designed and optimized ETL processes to streamline data ingestion into a data warehouse, leading to significant improvements in data quality and processing speed.
- Developed comprehensive Power BI and Tableau dashboards for North American clients, leading to operational savings by providing critical insights into data patterns and business metrics.

EDUCATION

Masters of Science in Data Science | Indiana University Bloomington, Bloomington, USA
Bachelors in Computer Science | GITAM University Hyderabad

ADDITIONAL EXPERIENCE

Graduate Research Analyst
Indiana University Bloomington, IN

Aug 2019 – Dec 2020

- Been part of the **guest lecture** for **ILSZ 637** - Information Visualization by Noriko Hara in Spring 2022, a graduate-level course talking about **data storytelling and data visualization**
- Developed data pipelines and Tableau reports to analyze student performance, retention, and graduation distribution, contributing to key decisions such as course waiver approvals.
- Built predictive models to analyze student performance history, helping professors assess assignment difficulty levels and comprehensive lifecycle reports on PhD student data.

PROJECTS

Cognitive Search Engine by NLP:

- Provided Cognitive search capability for **Eli Lilly and company** to search against databases like FDA and EMA via natural language questions and return relevant results to help with accelerating regulatory submissions for Eli Lilly as an Intern in **Summer 2021**.
- Performed abstraction-based Natural language generation methods using BERT and BART Transformer.

Pixel Gram Application:

- Designed a scalable distributed photo-sharing application for researchers to manage and share photos.
- Architected and developed 5 microservices for application with Rest APIs and RabbitMQ as intra-service communication.
- Implemented API gateway as middleware to validate/authenticate requests through JWT tokens and to act as a single endpoint.
- Deployed dockerized micro-services into OpenShift cluster scripting resource files through Jenkin pipelines on IU Jetstream cloud. Achieved up to 1800 concurrent requests per instance, tested through load test in JMeter.