PAWAN SINGH

Pune, India 411014

Results-driven AI & Data Science leader with 12+ years of experience across insurance, e-commerce, and financial sectors, delivering scalable ML solutions that drive business growth and operational efficiency. Specialized in **end-to-end AI pipelines**, **MLOps**, and **cloud-native deployments** using **AWS SageMaker**, **Docker**, and **CI/CD frameworks**. Adept in **Python**, **NLP**, **SQL**, and **data visualization tools** (Power BI), with a proven track record of leading high-performing teams and aligning AIML strategy with enterprise goals to maximize impact.

Work History

Senior Manager-Data Science *Bajaj Allianz, Pune | April 2023 - Current*

1: To prevent policy lapses caused by poorly timed and ineffective engagement, we built an ML model that boosted collections by ₹319 Cr with a targeted, goal-driven approach:
- Analyzed key factors causing policy lapses and defined clear goals for the model, focusing on retaining premiums.
- Developed an end-to-end model strategy, from data preprocessing to deployment, ensuring scalability and performance.
- Used MLflow, an open-source tool, to track experiments and monitor performance metrics.
- Packaged the ML model in Docker and integrated it into a CI/CD pipeline using **AWS CodePipeline** for seamless deployment.

2: Developed and deployed a **Fully Connected Feedforward Neural Network** on **AWS SageMaker** to predict policy renewals for lapses beyond 180 days, increasing collections by 20%.
- Built an end-to-end FNN model, optimized for scalability and performance with high-dimensional data.
- Managed experiments and metrics with **MLflow** for efficient model tracking.
- Integrated the model into a CI/CD pipeline using **AWS CodePipeline** for seamless deployment.

3: Developed Power BI dashboards for real-time KPI tracking and insights.

Senior Technical Lead - Data Science *HCL Technologies, Noida, Uttar Pradesh | April 2022 - March 2023*

1: Predict customer attrition: Collaborated with business stakeholders to understand key challenges, translated them into analytical solutions, and designed the complete project flow from development to deployment.
- Built a Random Forest-based propensity model to predict churn, leading to a 10% reduction in customer attrition within one quarter.
- Utilized MLflow for model tracking and versioning, and deployed the solution on AWS using automated MLOps workflows for scalable, production-ready deployment.

2: Built a LightFM hybrid recommendation model for Microsoft products, improving recommendation accuracy by 25% through the integration of collaborative and content-based filtering.

3: Created a dynamic dashboard, enhancing business tracking and reporting.

Senior Unit Manager - Data Science *Bajaj Finserv, Pune | September 2017 - March 2022*

1: Developed and deployed an RBI escalation prediction model on AWS using MLOps practices, enabling proactive customer outreach and reducing regulatory escalations by 30%.
a) Identified key drivers such as complaint frequency, penalty charges, and bounce history to model customer escalation risk.
b) Built a classification model to estimate the probability of RBI escalation, allowing the business team to intervene before escalation occurred.

2: Designed a cross-selling ml-model to identify customers with high potential to purchase additional products. During customer

interactions, pre-stamped product offers were pitched by agents based on model predictions, contributing to an increase of ₹67 lakh in monthly revenue.

3: Implemented a customer segmentation model using K-Means clustering to enable targeted marketing campaigns and personalized engagement strategies for each segment. Leveraged MLflow to track experiments, parameters, and model performance for improved reproducibility and optimization.

4: Designed forecasting models to estimate monthly customer service workload across multiple vendors handling calls, emails, and other requests. The models achieved ~95% accuracy, enabling precise resource planning and optimal agent allocation.

Senior Engineer - Analytics *Ennovate C.S.A Consulting Pvt Ltd, Pune, MH | September 2016 - September 2017*

1: Implemented K-Means clustering for customer segmentation in the insurance domain, enabling personalized sales campaigns and improving targeting efficiency across customer segments. Collected and processed customer policy, behavior, and demographic data, followed by feature engineering and clustering. Validated segment stability, integrated results with campaign planning, and deployed the model using MLOps practices for ongoing monitoring and retraining.
2: Built predictive models (Logistic Regression, Random Forest) for lapse risk.
3: Developed a customer data mart using SQL by integrating data from multiple source tables to support analytical use cases. Designed and automated stored procedures to refresh data daily, significantly reducing query time and ensuring data integrity for consistent, reliable insights.

Data Engineer *Edfo Global, Bangalore | October 2013 - August 2016*

1: Analyzed e-commerce data to identify key performance trends and customer behavior patterns. Developed SSRS reports for stakeholders, enabling real-time tracking of sales performance, order fulfillment, and customer engagement metrics for data-driven decision-making.

2: Ensured data accuracy and consistency in ETL processes by validating, cleansing, and transforming Excel/CSV data before loading into SQL databases. Streamlined data pipelines to support reliable downstream analytics and reporting.

Skills

- **Skills Leadership & Management:** Team Leadership, Project Management, Stakeholder Communication
- **Machine Learning & AI:** Predictive Modeling, NLP, Forecasting, Bagging & Boosting Algorithms, AB Testing, Deep Learning Models, ML-Ops
- **Tools & Technologies:** Python, AWS SageMaker, Kubernetes, Power BI, SQL Server, MongoDB, Docker, CI/CD Automation, Github
- **Business & Marketing Analytics:** Customer Segmentation, Churn Prediction, Cross-Selling, Risk Analytics, Business Intelligence, Multi-Touch Attribution, Market Mix Modeling

Education

MBA in Artificial Intelligence And Machine Learning D.Y. Patil, Pune | 2025

B.Tech in Computer Science And Engineering GBTU - U.P., Lucknow | 2011

Languages

English

Hindi