Nishtha Wagh

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Professional Summary

Senior Data Scientist with 4+ years building production credit risk and fraud detection models for consumer lending, from feature engineering to deployment, optimizing portfolio performance while managing default risk levels.

Work Authorization: F-1 OPT (current) + STEM OPT valid to 2028 (no sponsorship required short term); Open to relocation

Technologies

Credit Risk & Lending: Credit Scoring, Default Prediction, Loss Modeling, Portfolio Management, Fraud Detection, Underwriting Automation, Propensity Modeling, Risk Segmentation

Feature Engineering: Bureau Data (Experian, CIBIL), Transaction Pattern Analysis, Credit Utilization, Delinquency Prediction

Machine Learning: Gradient Boosting, XGBoost, Logistic Regression, Random Forests, Propensity Modeling, Survival Analysis

Languages & Tools: Python, SQL, PySpark, R

Cloud Platforms: AWS (SageMaker, Redshift, S3), GCP (BigQuery, Cloud Run), Azure

Experimentation: A/B Testing, Hypothesis Testing, Causal Inference, Champion-Challenger Testing

Production: Model Monitoring, Model Validation, Model Documentation, Drift Detection, CI/CD, Docker, Git

BI & Reporting: Power BI, Tableau, Looker

Work Experience

SENIOR DATA SCIENTIST, Amazon India (via Axio), India — May 2022 – June 2023

- Built and deployed **gradient boosting credit risk models** on **AWS SageMaker** using **200+ bureau and behavioral features**, serving **500K+ daily credit decisions** while maintaining portfolio default rates within targets.
- Engineered behavioral features from transaction patterns using **SQL and PySpark**, improving cross-sell propensity model performance and reducing fraud model false positive rates.
- Designed credit line optimization using **risk-based segmentation** (thin-file vs. established credit), supporting portfolio expansion initiatives while maintaining target charge-off rates.
- Led root-cause analysis on **bureau score discrepancies** across **5M+ applicant records**; remediation drove **12% improvement** in model reliability and reduced manual review requirements, presented to **VP of Risk**.
- Built **model monitoring framework** with **PSI >0.25** thresholds across **200+ features**, preventing silent model degradation.
- Optimized **Redshift** feature pipeline using **incremental ETL patterns** via **Jenkins**, cutting runtime by **95% (8 hrs to 25 mins)**.

DATA SCIENTIST, Amazon India (via Axio), India — Jan 2021 – May 2022

- Built and deployed **credit risk and fraud models (Gradient Boosting, Logistic Regression)** on **AWS SageMaker** for Amazon BNPL serving **2M+ customers (production AUC 0.78)**.
- Engineered **80+ credit and behavioral features** in **Redshift** from bureau data (Experian, CIBIL), transaction logs, and repayment patterns for risk-based pricing and limit assignment.
- Designed **A/B experiments** on credit product cross-sell campaigns using **Python and SQL**, optimizing offer targeting through propensity scoring.
- Built **batch scoring pipelines** processing **300K+ daily credit evaluations**, automating underwriting decisions and reducing manual review requirements.
- Built **Looker dashboards** tracking approval rates, bad rates, vintage curves for **20+ cross-functional stakeholders**.

DATA SCIENTIST, ASU Enterprise Partners, Arizona, United States — Mar 2024 – Present

- Built **clustering models (K-means, hierarchical)** on behavioral and demographic data to segment **50K+ alumni**, identifying underperforming cohorts for personalization strategy.
- Designed and analyzed **A/B experiments** testing personalized content, improving CTR and registrations **(7% lift)** with zero unsubscribe impact.
- Deployed **LLM pipeline** on **GCP Cloud Run** processing **20K+ weekly narratives**, reducing analysis time from weeks to hours.

Education

Arizona State University, USA, Master of Science in Data Science; **GPA: 3.90** — Aug 2023 – May 2025

Nirma University, India, Bachelor of Technology in Computer Engineering; **GPA: 3.46** — Aug 2017 – Jun 2021