YUG BHAVSAR

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EXPERIENCE

Research Assistant   Sep 2025 – Dec 2025
Civil Engineering Department, UTA

Conducting research on time-dependent system reliability using Gaussian Process surrogate models to approximate dynamic limit-state functions across 1,000+ simulation samples.

Developed surrogate-based Monte Carlo simulations in Python, reducing computational cost by ~60–70% compared to brute-force reliability simulation-s while maintaining estimation accuracy.

Social Benz   Jan 2024 - Apr 2024
Data Science Intern
- Optimized SQL queries and database architecture, reducing response times by 35% and server load by 15% during peak usage
- Developed ETL pipelines using SQL and Python to integrate disparate data sources into a centralized warehouse for analytics
- Implemented machine learning models in collaboration with cross-functional teams, resulting in 20% increase in user engagement
- Created interactive Tableau dashboards to visualize user behavior patterns, leading to personalized messaging and 12% increase in daily active users.

Cre-Art Solutions   Jun 2023 - Jul 2023
Python Development Intern
- Implemented robust data validation within Django models, reducing data entry errors by 18% and improving data quality
- Engineered customer churn prediction models achieving 85% accuracy, directly informing retention strategies
- Built interactive Power BI reports connecting to SQL databases with DAX measures to track key business metrics
- Developed RESTful APIs using Django to serve ML model predictions for real-time decision-making applications.

DevTown   May 2022 - Jul 2022
Machine Learning Intern
- Implemented supervised machine learning models for customer behavior analysis, improving prediction accuracy by 15% (F1-score)
- Created PostgreSQL stored procedures and complex queries to efficiently process and analyze large datasets
- Achieved 95% model evaluation score by implementing robust data preprocessing and validation techniques
- Presented research on Generative AI applications in data privacy, leading to adoption of new techniques in ongoing projects.

SKILLS

Programming Languages: Python, R, SQL, Java, C++, C, PHP
Data Science & ML: PyTorch, TensorFlow, Scikit-learn, Keras, NLP, Computer Vision, Time Series Analysis.
Database Management: PostgreSQL, MySQL, MongoDB, SQL Server, Database Optimization.
Data Visualization: Tableau, Power BI, Matplotlib, Seaborn, Plotly, D3.js

PROJECTS

Sales Forecasting | *Undergraduate Project*
- Trained and validated a Random Forest Regressor model on a comprehensive dataset of 10,000+ retail products, achieving an R^2: 0.85, and ensuring robust and reliable price predictions.
- Structured unstructured retail sales data by encoding product categories, handling 5% of missing values through mean imputation, and normalizing the dataset to improve model performance.
- Implemented a Random Forest Regressor model achieving MSE: 1.23 and R^2: 0.85; model predicted product unit prices with 95% accuracy, informing strategic inventory management decision
- Designed an end-to-end machine learning pipeline, from data ingestion to model deployment, that provided actionable insights, influencing the decision to increase marketing spend by 15%.

Customer Sentiment Analysis | *Personal Project*
- Constructed a sentiment analysis model leveraging TF-IDF vectorization to process customer reviews, resulting in a 20% reduction in the time needed to identify critical product issues.
- Designed and trained an LSTM neural network using TensorFlow, achieving 85% accuracy.
- Fine-tuned hyperparameters via grid search and cross-validation, reducing prediction error by 15%.
- Deployed a Flask-based sentiment analysis tool integrated within a business application web interface, decreasing manual review time by 6 hours per week by automating initial customer feedback assessment.

Video Background–Foreground Separation | Graduate Project
- Implemented matrix (RPCA, CUR, IRCUR) and tensor (TUCKER/HOOI, CP, RTCUR) decomposition methods for video background subtraction.
- Evaluated models on synthetic and real grayscale videos using SNR, SSIM, and runtime metrics.
- Achieved best reconstruction with RPCA (35.9 dB SNR); analyzed accuracy vs computational trade-offs.
- Built an end-to-end Python pipeline using NumPy, SciPy, TensorLy, and OpenCV for video preprocessing and numerical computation.

EDUCATION

University of Texas at Arlington   Arlington, Texas
Master's data science GPA – 3.67/4.00   Aug 2024 – Present
Coursework: Machine Learning, Data Visualization, Big Data Management, Artificial Intelligence, Advanced Statistics, Data Science Fundamentals.

Gujarat Technological University   Ahmedabad
B.E Computer Science - AI & ML Specialization, GPA – 3.87/4.00   Jun 2020 - Jun 2024

CERTIFICATION
- Foundations: Data, Data, everywhere - Google/Coursera
- Build a Face Recognition Application using Python – GUVI