Deepak B Deokar

deepakdeokar2626@outlook.com | +15623362862 | LinkedIn | Portfolio

Education

Master's in Information Systems *Aug 2023 - May 2025*

California State University, Long Beach

B.Tech in Instrumentation and Control *Aug 2018 - May2022*

College of Engineering, Pune, India

Technical Skills

Skills: Artificial Intelligence, Machine Learning, Statistics, scikit-learn,Matplotlib, Data Analysis, Responsible AI

Frameworks: TensorFlow, Keras, PyTorch

Programming Languages: Python, SQL, MATLAB

Tools: MS-Excel, Power BI, Tableau, Alteryx, Git

Work Experience

Programmer Analyst *Jul 2022 - Aug 2023*

Cognizant Technology Solutions

- Analyzed over **5 million data points** from sensor data in pharmaceutical manufacturing, using Python and SQL to monitor and optimize conditions like temperature and humidity, ensuring **99% optimal conditions** and minimizing production disruptions.
- Developed machine learning models (e.g., anomaly detection) that identified equipment issues early, leading to a **15% reduction** in unplanned maintenance and a **20% increase** in equipment uptime, significantly improving operational efficiency.
- Built interactive dashboards in Power BI to visualize **50+ key metrics**, enabling stakeholders to make faster, data-driven decisions, which improved **maintenance scheduling efficiency by 25%** and reduced downtime.
- Collaborated with cross-functional teams to design and implement **data-driven solutions** that optimized workflows, driving a **30% improvement** in overall production performance, reducing bottlenecks and enhancing productivity.

Intern *Dec 2021 - May 2022*

AFour Technologies

- Automated data collection and reporting processes for clients in the software development sector, reducing manual effort by **30%**, which saved over **200 hours/month** and improved data accuracy, enabling **20% faster decision-making**.
- Analyzed large datasets (over **1 million records**) to uncover trends, patterns, and anomalies, identifying critical areas for improvement, which led to a **10% reduction** in system downtimes and a **15% increase** in overall system reliability.
- Utilized SQL and Python to clean, manipulate, and process data, supporting the development of **predictive analytics models**, improving forecasting accuracy by **12%** for system performance and trends.
- Collaborated with senior analysts on **data quality assessments**, improving the overall data pipeline efficiency by **25%**, and delivered actionable insights to improve client systems.

Projects

Responsible AI Toolkit for Finance

- Designed a toolkit to assess and mitigate bias in AI-driven financial decision-making, focusing on credit scoring, loan approvals, and fraud detection.
- Utilized AIF360 for Bias Detection & Fairness Analysis, ensuring fairness and ethical considerations in financial AI models.
- Employed GANs to generate synthetic data, addressing dataset bias and improving the robustness of predictive models.
- Integrated AI Explainability with OpenAI's GPT models and created visualizations/reports to improve transparency and decision-making in financial systems.

Diabetes and Retinopathy Classification: A Multi-Modal Approach

- Developed machine learning models (Random Forest, Gradient Boosting, Neural Networks) to classify diabetes status, achieving 91% accuracy using Random Forest.
- Applied ResNet50 for retinal image analysis, classifying diabetic retinopathy into five severity levels with 82% accuracy.
- Implemented SMOTE for class balancing and transfer learning to enhance model performance.
- Evaluated models with Confusion Matrices, ROC Curves, and Class-wise Accuracy to ensure robust results.

Advanced GDP Growth Rate Forecasting Tool

- Built a predictive tool using ARIMA models in Python to forecast GDP growth rates, supporting strategic economic decisions.
- Designed a Tkinter-based UI for real-time forecasts with customizable parameters and visualizations.
- Conducted data preprocessing with stationarity tests and optimized ARIMA parameters via grid search.
- Validated model accuracy using MAPE and RMSE metrics, ensuring reliable and actionable forecasts for economic planning.

Certifications

Alteryx Designer Core Certification 2023

Machine Learning in Data Science 2022

SQL for Data Science 2021