Vishal Kumar. S

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LinkedIn | GitHub | My Portfolio

MACHINE LEARNING ENGINEER

Data Science | Machine Learning | MLOps

Aspiring data scientist with hands-on experience in end-to-end ML solutions and content creation. Skilled in developing high-accuracy models, implementing MLOps practices, and communicating complex technical concepts to diverse audiences.

WORK EXPERIENCE

Analytics Vidhya - *Remote*   09/2023 - 03/2024

Data Science Content Creator   Published Works

Create insightful articles on MLOps, machine learning best practices for technical and non-technical readers.

- Authored 4 high-quality articles on MLOps, generating over 645 views and demonstrating expertise in model deployment, monitoring, and ML workflows.
- Developed comprehensive guides leveraging MLOps tools like ZenML, mlflow and Evidently to showcase ML lifecycle management.

EDUCATION

Sri Eshwar College Of Engineering - *Coimbatore, Tamil Nadu*

Bachelor of Technology – Artificial Intelligence and Data Science, 2022-2026

CGPA: 8.47/10 (till 4th Semester)

PROJECTS

Predictive Guardians   View in GitHub

- Implemented criminal profiling to analyze socio-economic and geographical details of the accused, enabling targeted interventions.
- Conducted spatial and temporal (yearly, monthly, daily) crime pattern analysis using DBSCAN clustering and Folium mapping to identify crime hotspots.
- Developed predictive models for recidivism risk, achieving 84% AUC, 85% recall for identifying potential reoffenders, and 87% AUCPR, with 73% overall accuracy.
- Optimized allocation of 1,200+ police personnel using PULP mathematical programming, balancing constraints and officer ratios for efficient patrol coverage across 15,800 beats in 27 police units in Karnataka.

- Integrated a robust continuous learning and feedback mechanism, monitoring user ratings, alerts, collaborative stakeholder feedback sessions, and knowledge capture.

Sales Conversion Optimization MLOps Project   View in GitHub

- Built automated end-to-end MLOps pipeline leveraging ZenML, GitHub Actions, CML.
- Integrated Evidently.ai for data/model validation with 67 tests and real-time alerts.
- Optimized regression model achieving R^2 0.81, RMSE 0.61 using H2O AutoML.
- Improved interpretability via SHAP/LIME and generated reports for business teams.
- Utilized Neptune.ai for experiment tracking, monitoring and visualizations.
- Developed Streamlit dashboard for batch predictions with data quality checks.

SKILLS

- **Programming:** Python, Java, C, SQL, MongoDB, HTML, CSS, Django.
- **Data Science:** NumPy, Pandas, Scikit-learn, Pytorch, TensorFlow, Keras, SciPy, Matplotlib, Seaborn, Folium, SHAP, LIME, H2O AutoML, PuLP
- **MLOps:** MLflow, ZenML, Prefect, GitHub Actions, CML, Docker, Neptune.ai, Evidently, Grafana.
- **Cloud:** AWS & Azure (Core Services: Compute, Storage, DevOps)
- **Core CS:** Data Structures & Algorithms, Object-Oriented Programming, Database Management Systems, Operating Systems, Computer Networking.

ACHIEVEMENTS

- 3 times Data Science Blogathon Winner at Analytics Vidhya.
- Received appreciation from Hamza Tahir, CTO of ZenML, for my "Sales Conversion Optimization MLOps Project," showcasing expertise in MLOps workflows and tools. Check out here: Appreciation Post.
- Merged 2 PRs during Hacktoberfest 2023, earning exclusive digital badges and contributing to a tree plantation initiative.