VISHAL KUMAR A

AI ENGINEER | DATA SCIENTIST | SOFTWARE DEVELOPER

CONTACT

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SKILLS

Programming & Development

Python (Pandas, NumPy, Flask, scikit-learn, TensorFlow, PyTorch, Regex, BeautifulSoup, PyPDF2, OpenPyXL), SQL, HTML5, CSS3, JavaScript, REST APIs, Object-Oriented Programming (OOP)

Web & Full-Stack Development

Front-end: HTML, CSS, basic JavaScript
Back-end: Flask, REST APIs, Server-side Logic, Authentication, Admin Dashboards
Deployment: Linux, Nginx, Gunicorn, SSL, DNS, Docker (basic), CI/CD (basic)
Cloud & MLOps: AWS/Azure (basic exposure), Model Deployment, MLOps practices, Model Monitoring

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Data Science & Machine Learning

Supervised & Unsupervised Learning (Regression, Classification, Decision Trees, Random Forest, XGBoost, K-Means, PCA)
Experience with LLMs, NLP, and GenAI through projects (sentiment analysis, text classification).
Model development lifecycle: data cleaning, feature engineering, training, validation, and evaluation using metrics such as accuracy, F1-score, precision/recall, RMSE.

ABOUT ME

AI Engineer and Software Developer with hands-on experience building AI-driven solutions, scalable automation pipelines, and data-centric applications. Skilled in **Python, SQL, Flask, and machine learning** techniques with experience working on **LLMs, NLP, GenAI** experimentation, predictive analytics and cloud deployment.
Strong understanding of **ML** concepts, **model deployment**, **model evaluation**, and real-time system optimization.
Experienced in cleaning and transforming both structured and unstructured data, implementing dashboards, and aligning solutions with business needs.
Passionate about contributing to AI first platforms, enterprise digital transformation, and secure scalable systems aligned with IBM's mission of delivering high-value, AI-enabled user experiences.

DATA SCIENTIST INTERN — JK TYRES

- **Automated PDF-to-Web-to-Excel pipelines, reducing R&D processing time by 70% and improving data quality.**
- **Built dynamic Python + Flask tools to extract and structure unstructured PDF data into Excel/SQL formats.**
- **Implemented real-time validation, monitoring, and error handling for experimental data workflows.**
- **Processed large datasets using data cleaning, preprocessing and predictive analytics techniques.**
- **Collaborated with cross-functional stakeholders in an agile workflow to align solutions with business requirements supporting digital transformation**

SOFTWARE DEVELOPER EMAILONBUSINESS

- **Developed a distributed, high-performance email verification platform handling 100K+ parallel checks using Python, Flask, Celery, and message queues.**
- **Implemented multi-layer verification: SMTP, MX/DNS, SPF/DKIM/DMARC, catch-all detection, and risk scoring.**
- **Built dashboards and KPIs for domain quality monitoring, bounce risk analytics, and platform performance.**
- **Implemented authentication, role-based access, billing logic, and admin dashboards for the SaaS platform.**
- **Managed deployment with Linux, Nginx, Gunicorn, SSL, DNS, improving security, scalability, and system resilience.**
- **Applied Git version control, architectural documentation, and maintainability standards.**

EDUCATION

JSS Science and Technology University, Mysuru

MSc in Data Science

Garden City University, Bengaluru

Bachelor's Degree in Data Science and Cybersecurity

St. John's High School

ICSC - 10th

National Pu College

PCMB - 12th

PROJECTS

Real-Time Email Verification System

- Developed a distributed verification platform capable of handling 100K+ parallel checks using Python, Flask, Celery, and Redis.
- Implemented multi-layer validation (SMTP, MX/DNS, SPF/DKIM/DMARC, catch-all detection) with automated risk scoring for enterprise accuracy.
- Deployed on Linux with Nginx, Gunicorn, SSL, and implemented logging, throttling, and retry logic to ensure system reliability and scalability.

Bulk PDF-to-Web-to-Excel Data Extraction System

- Engineered an automated ETL workflow using PyPDF2, Regex, Pandas, and OpenPyXL to convert unstructured PDF files into structured Excel-ready datasets.
- Developed a web interface for field mapping, validation, and review, enabling scalable processing and reducing manual input effort.

LLM-Powered Sentiment Analysis System

- Built a sentiment classifier using VADER/TextBlob and expanded capability with LLM-based classification (OpenAI/Hugging Face) and prompt engineering.
- Evaluated traditional vs. LLM performance using metrics including accuracy, precision, recall, relevance score, and hallucination review.

Student Performance Prediction Model (ML Aligned)

- Created a machine learning model to predict student performance using scikit-learn and XGBoost with feature engineering and hyperparameter optimization.
- Implemented end-to-end ML lifecycle including data preprocessing, evaluation, documentation, and improvement aligned with ML principles.

Semi-Automated Web Data Capture Tool

- Developed a Python + Flask tool enabling users to highlight form fields and automatically map inputs to Excel formats, reducing repetitive workflows.
- Integrated real-time validation and field mapping to ensure accuracy during data collection and reporting.

GenAI Prompt Engineering & LLM Evaluation (Mini-Project)

- Experimented with OpenAI and Hugging Face models to compare prompt styles, response quality, and hallucination rate.
- Applied evaluation metrics including BLEU score, relevance scoring, and structured test cases.

Power BI Sales Insights Dashboard

- Built interactive dashboards analyzing ₹984M+ sales performance, incorporating KPIs, drill-downs, and dynamic filters using DAX.
- Provided business intelligence insights to support strategic decision-making.

DECLARATION

I declare that the information provided is true to the best of my knowledge.

Signature
Vishal Kumar A