Shivdayal Singh

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PROFILE

Machine Learning Engineer with expertise in Time Series Forecasting, Computer Vision, and Natural Language Processing. Adept at designing scalable ML pipelines, deploying models in cloud environments, and driving business impact through data-driven solutions. Proficient in Python, SQL, Azure, AWS, and Databricks. Passionate about solving real-world problems using cutting-edge AI technologies.

SKILLS

- **Programming :** Python, SQL, PySpark
- **Machine Learning /AI:** Time Series Forecasting, NLP, Computer Vision, Reinforcement Learning, LangChain, LangGraph
- **MLOps & Tools:** Git, CI/CD, OR-Tools, MLflow
- **Cloud Platforms & Tools:** Azure (Databricks, ML Studio), AWS
- **Data Engineering & Processing:** SQL, Spark, Databricks

EDUCATION

Indian Institute of Technology, Kharagpur   *Master of Technology*

EXPERIENCE

Company: Quantiphi Analytics Solution Pvt Ltd.   **Aug 2022 – Present**

Project: Food and Beverage Recommendation | Client: Disney   **Dec 2024 – Present**
- Engineered a personalized recommendation engine using Meta's Pearl framework to enhance customer engagement.
- Applied causal inference and reinforcement learning to optimize item suggestions based on user behavior.
- Designed multi-hot encoded cart history features and integrated association rule mining into the reward function.
- Trained neural linear bandit models with Thompson Sampling, achieving a **25% hit rate** on test data.
  Technologies: AWS, Reinforcement learning, Data Analysis.

Project: Demand Forecasting | Client: CONA   **Nov 2023 – Oct 2024**
- Built automated data pipelines processing data from Snowflake and mapping tables, reducing manual overhead.
- Developed a custom forecasting engine using Prophet, LightGBM, and Auto ARIMA, outperforming BlueYonder by up to **3.28%**.
- Integrated promotions and holiday features to improve temporal modeling and forecast precision.
- Deployed scalable solutions in Azure Databricks across two major bottlers (CCCi & United).
  Technologies: Azure Databricks, SQL, PySpark, Prophet, LightGBM, Auto ARIMA

Project: Trailer Tracking | Client: CONA   **Jan 2023 – Oct 2023**
- Delivered a computer vision solution to extract trailer metadata, targeting **$500K ROI** per bottler annually.
- Benchmarked YOLOv8 and implemented custom object detection algorithms achieving **90%** accuracy.
- Integrated OCR tools (PaddleOCR, CRAFT, Form Recognizer) to automate trailer check-in/out processes.
- Designed vertical text recognition models and segmentation pipelines to reduce manual errors.
  Technologies: Azure ML Studio, YOLO, OCR, Image Segmentation

PROJECTS

BlogSmithAI   *FastAPI, LangGraph, LangChain, Open AI*
FastAPI microservice generating SEO-optimized blog content using LangGraph, LangChain, and Groq LLM.

MCP Multi-Agent Travel Assistant   *LangChain, LangGraph, MCP, Groq LLM*
Multi-agent travel planner coordinating bookings and budgets via LangGraph and Groq LLM.

Agentic AI News   *Ollama, LangGraph, LangChain, Tavily API, Streamlit*
AI-powered news aggregator with LangGraph orchestration and Tavily API, deployed via Streamlit.

CERTIFICATIONS

- **Azure:** AZ-900 (Fundamentals), AZ-104 (Administrator), AZ-305 (Solutions Architect Expert)
- **Langchain:** Develop LLM powered applications
- **Generative AI :** Transformers & LLMs Mastery

LEADERSHIP & TEACHING

- **Event Coordinator (Alchemy) :** Led technical and sports fest operations, ensuring high engagement and execution.
- **Teaching Assistant (Design Lab CH69003):** Mentored 70+ students in Python, managed lab sessions, and evaluated assignments.