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**Name:** Abhay Pratap Singh

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**Primary Skills:**

- Data Engineering with Azure
- Reinforcement Learning using Python
- Machine Learning with Python
- Git
- Gen AI
- Database Management System (DBMS)
- Data Visualization using Power BI
- Web Development using HTML, CSS, Java Script, React, Node, Fast API and Streamlit
- Java Full Stack Development
- Blockchain
- Azure DevOps

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**Experience Summary:**

- I received training in Data Engineering with Microsoft Azure and worked on a capstone project focused on data analysis using PySpark, ADLS, ADB, ADF, SQL, and other related technologies.
- As an Associate Data Scientist, I collaborated in research and document unique domain-specific use cases of Generative AI, both with and without traditional AI. Additionally, I have worked on implementing OpenAI, Azure OpenAI, and LangChain and developed a PDF Query Chatbot using RAG, as well as fine-tuning models.
- Developed multiple large-scale models for timeseries Data Analysis and prediction.
- Contributed to different POC's regarding Predictive model generation, Anomaly Detection and Object Detection.
- Built responsive UI for different client demo using React, Node, Fast API and streamlit.

**Total Industry Experience: 1 Years & 7 Months**

➤ **NiSource- (SLD OCR Extraction)**

1. **Description:** Extracting symbols and their corresponding values from given single line diagrams and storing it in a table format for further functionality.
2. **Role:** Associate Data Scientist
3. **Responsibility:** Developed a web-based application that performs Optical Character Recognition over SLD (Single Line Diagrams) architectures and provides serializable symbol and character mapping as a result
4. **Technical Tools/Server/Data base:** YOLO, Easy OCR, Roboflow, Kaggle, HTML, CSS, JavaScript, Node, Fast API.

➤ **CoE Analytics - AI Demos for Existing Accounts- (Worked as a Developer under AI Labs)**

1. **Description:** Contributed to AI and ML projects spanning vision analytics, predictive modeling, and generative AI, leveraging deep learning and reinforcement learning to solve industry-specific challenges.
2. **Role:** Associate Data Scientist
3. **Responsibilities:**
  - 3.1. Developed AI model for Time Series Forecasting, Object detection and Rubber Manufacturing multi output regressor.
  - 3.2. Contributed to Generative AI and reinforcement learning projects like Raychem Rubber Moulding and image synthesis, Pallet detection, Anomaly Detection, etc.
  - 3.3. Created user Interfaces using Streamlit and React to visualize AI model output.
4. **Technical tools used/Server/Data base:** Kaggle, Azure OpenAI, Azure Pipelines, Python PDM, Git, Jupyter Notebook, VS Code.
5. Tech Stack: Vision Analytics, Reinforcement Learning, Neural Networks, Frontend(React, Node, Fast API, and Streamlit)

➤ **Gen AI Chatbot Assistant Demo - (Worked as a fresher-Internal Project)**

1. **Description:** A generative AI chatbot is a type of conversational AI system that uses deep learning and natural language processing (NLP) techniques to generate human-like contextually relevant responses in real time.
2. **Role:** Engineer Trainee
3. **Responsibilities:** Implementing and exploring the concepts of deep learning and Gen AI
4. **Technical tools used/Server/Data base:** OpenAI, Jupyter Notebook, VS Code, Azure WebApp and Azure Pipelines, Python PDM, Git

➤ **Gen AI Areas to work on & Use Cases-**

1. **Description:** Exploring Transformer Reinforcement Learning for fine-tuning open models explored to fine-tune Google Gemma for sentiment analysis with TRL trying to fine tune on different techniques to generate SQL Query from Natural Language with Tiny Llama, Mistral7b model
2. Role: Associate Data Scientist
3. Responsibilities: Implementing and exploring the concepts of TRL and RLHF
4. Technical tools used/Server/Data base: OpenAI, Jupyter Notebook, VS Code, hugging face, Python PDM

**Technical Skills:**

- **Database Systems:**
  - MySQL
  - HiveQL
  - Microsoft SQL Server
- **Subject Area:**
  - Full Stack Development using Advanced Java
  - Data Engineering
  - Data Pre-processing

- Machine Learning and AI
- **Big Data Platforms:**
  - Apache Spark
  - Azure Hadoop
  - Microsoft Azure
- **Language/Platforms:**
  - Java, Python
  - SQL
  - JavaScript
  - Langchain
- **Foundational Problem Solving & Programming – Training (Aug – Sept 2023)**
  - Software Development Life Cycle
  - Database Management System with MySQL
  - Core Java and OOPS
  - Git and Linux Command
- **Data Engineering with Azure – Training (Oct – Dec 2023)**
  - Python - OOPs, Pandas, NumPy, Matplotlib, Seaborn
  - Py Spark, HDFS, Hive
  - Microsoft Azure - Storage Account, Data Factory, Data Bricks, Azure SQL, Logic Apps
  - Microsoft Power BI

**Certificate and Trainings:**

Certification	Issued By	Issued Month
Data Engineering with Azure	Stack Route (In Association with Happiest Minds)	16th Oct,2023 – 8th Dec,2023
Databricks Accredited Generative AI Fundamentals	Databricks Academy	5 <sup>th</sup> Dec,2024 – 5 <sup>th</sup> Dec,2026