## **CSE355 - Data Science Professional Certification**

## **Role Exploration**

A Data Scientist plays a crucial role in extracting insights from structured and unstructured data to drive business decisions. The primary responsibility involves data collection, cleaning, and analysis using statistical and machine learning techniques. Data Scientists build predictive models, develop algorithms, and validate models using real-world data. They collaborate with cross-functional teams to translate data-driven insights into actionable strategies.

# Key Responsibilities:

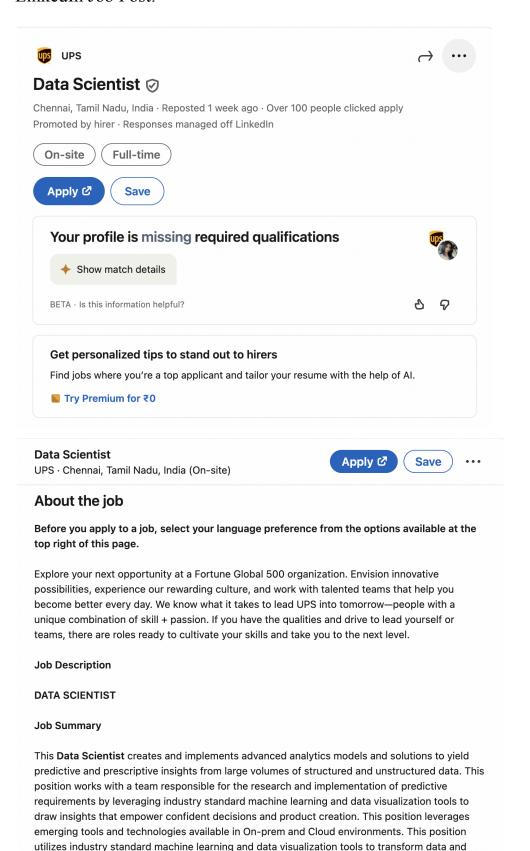
- Collect, clean, and preprocess large datasets from multiple sources.
- Apply statistical methods and machine learning algorithms to identify patterns and trends.
- Build predictive models for business use cases (e.g., customer churn, fraud detection).
- Visualize data using dashboards and reports for stakeholders.
- Communicate technical findings in a clear, non-technical manner.

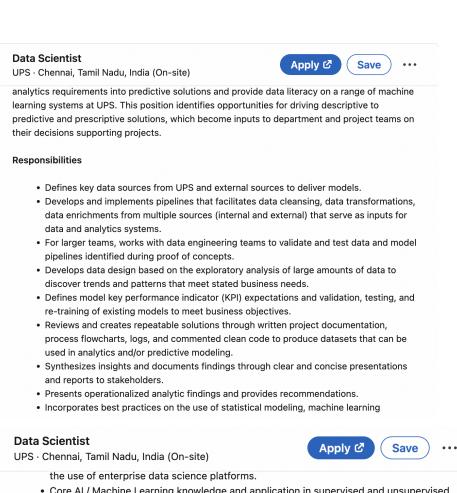
#### **Essential Skills:**

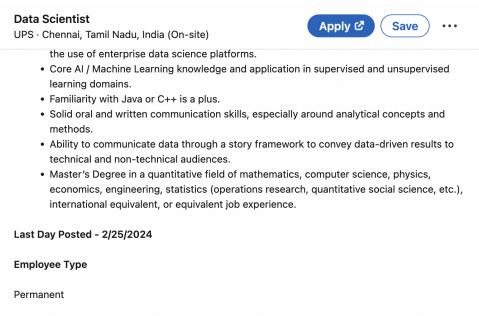
- Programming: Proficiency in Python and R for data manipulation and modeling.
- Mathematics & Statistics: Strong foundation in probability, linear algebra, and hypothesis testing.
- Machine Learning: Knowledge of supervised and unsupervised learning models.
- Data Visualization: Experience with tools like Tableau, Power BI, and libraries such as Matplotlib or ggplot2.
- Big Data Tools: Familiarity with Hadoop, Spark, and cloud platforms (AWS, Azure, GCP).

**Common Tools:** Python, R, SQL, TensorFlow, Scikit-learn, Tableau, Git, Jupyter Notebook.

#### LinkedIn Job Post:







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## 5 Key Requirements:

- Expertise in R, SQL, Python and/or any other high-level languages.
- Experience in development of AI and ML using platforms like VertexAI, Databricks, or SageMaker, and familiarity with frameworks like PyTorch, TensorFlow, and Keras.

- Strong analytical skills and attention to detail, with experience applying models from small to medium scaled problems.
- Deep understanding of data management pipelines and experience in launching advanced analytics projects in production.
- Ability to communicate data through a story framework to convey results to both technical and non-technical audiences.