**Internship Program -Data Science**

**\*\*\*Soft Skills -Communication, Collaboration, Critical Thinking, Creativity.**

Here’s a key **technical skill** required for a **Data Science internship**:

1. **Core Components of Data Science**

| **Category** | **Key Skills** |
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| **Programming** | Python (Pandas, NumPy), R, SQL |
| **Data Analysis** | Data cleaning, EDA (Exploratory Data Analysis), Statistical analysis |
| **AI (Machine Learning, Deep learning, GenAI)** | Supervised (Regression, Classification),  Unsupervised Learning (Clustering),  Deep Learning (Neural Networks, NLP, Computer Vision),  Reinforcement Learning  GenAI ,  Use Scikit-learn, Model Evaluation. |
| **Data Visualization** | Matplotlib, Seaborn (Python), Plotly, or ggplot2 (R), Tableau, Power BI (Business Intelligence) |
| **Big Data Tools** | Hadoop, Spark (Basics) |
| **Database** | SQL (MySQL, PostgreSQL), NoSQL (MongoDB) |
| **Version Control** | Git, GitHub/GitLab |
| **Cloud Platforms** | AWS, Google Cloud, Microsoft Azure (Basic knowledge) |
| **Others** | Excel (Advanced), Jupyter Notebooks, Docker (Basics) |

1. **Data Science Workflow (Lifecycle)**
2. **Problem Definition** (Business Understanding)
3. **Data Collection** (APIs, Web Scraping, Databases)
4. **Data Cleaning & Pre-processing** (Handling Missing Values, Outliers)
5. **Exploratory Data Analysis (EDA)** (Finding Patterns & Trends)
6. **Feature Engineering** (Creating Relevant Features)
7. **Model Building & Training** (ML Algorithms)
8. **Model Evaluation** (Accuracy, Precision, Recall, F1-Score)
9. **Deployment & Monitoring** (Flask, FastAPI, Docker, Cloud)
10. **Applications of Data Science**

* **Predictive Analytics** (Stock Market, Weather Forecasting)
* **Recommendation Systems** (Netflix, Amazon)
* **Natural Language Processing (NLP)** (Chatbots, Sentiment Analysis)
* **Computer Vision** (Facial Recognition, Self-Driving Cars)
* **Healthcare Analytics** (Disease Prediction, Drug Discovery)

1. **Tools & Technologies**

* **Jupyter Notebook, Google Colab** (Coding Environment)
* **Git & GitHub** (Version Control)
* **TensorFlow, PyTorch** (Deep Learning)
* **Scikit-learn, XGBoost** (ML Models)
* **Docker, Kubernetes** (Deployment)

1. **Soft Skills for Data Scientists**

* Critical Thinking
* Business Acumen
* Communication (Storytelling with Data)
* Problem-Solving

This covers the essential skills for a **Data Science internship**.

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