Data Science Internship

Curriculum

15 Days Internship Curriculum:

1. **Introduction to Data Science:**
   - Understand the role of data science in solving real-world problems.
   - Explore data science applications.

2. **Python Basics for Data Science:**
   - Learn Python syntax, data types, and control structures.
   - Understand libraries like NumPy and Pandas.

3. **Exploratory Data Analysis (EDA):**
   - Study data visualization techniques.
   - Clean and preprocess data.

4. **Statistical Concepts:**
   - Understand descriptive statistics.
   - Learn about probability distributions.

5. **Unsupervised Learning:**
   - Explore supervised and unsupervised learning.
   - Implement basic ML algorithms (e.g., linear regression, decision trees).

6. **Model Evaluation and Validation:**
   - Learn about cross-validation and performance metrics.

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30 Days Internship Curriculum

7. **Advanced Machine Learning:**
   - Dive deeper into ML algorithms (e.g., SVM, random forests).
   - Feature engineering and selection.

8. **Time Series Analysis:**
   - Understand time-dependent data.
   - Build time series models.

9. **Natural Language Processing (NLP):**
   - Introduction to deployment platforms
   - Basics of containerization (Docker)

10. **Data Visualization with Matplotlib and Seaborn:**
    - Create informative plots and charts.

11. **Project:**
    - Query databases using SQL.
    - Understand relational databases.

12. **Final Mini Project:**
    - Apply concepts to a small data science task (e.g., predicting house prices).

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45 Days Internship Curriculum

13. **Advanced Statistical Modeling:**
    - Explore ANOVA, regression diagnostics, and hypothesis testing.
    - Multivariate analysis.

14. **Feature Engineering Techniques:**
    - Handle missing data, outliers, and categorical variables.

15. **Deep Learning Basics:**
    - Introduction to neural networks.
    - Implement a basic feedforward neural network using TensorFlow or PyTorch.

16. **Natural Language Processing (NLP):**
    - Learn about distributed computing and Spark.
    - Process large datasets.

17. **Final Comprehensive Project:**
    - Work on a more complex data science project.
    - Showcase your skills through a portfolio.