**2.AI,ML, DL Relationship Diagram:**

Machine Learning

Artificial Intelligence

Deep Learning

DATA SCIENCE

1. **Artificial Intelligence (AI):**

The broadest field encompassing systems and machines capable of performing tasks that typically require human intelligence. AI includes everything from rule-based systems to advanced algorithms capable of learning and adapting.

1. **Machine Learning (ML):**

A subset of AI that focuses on developing algorithms that allow machines to learn from and make predictions based on data. Instead of being explicitly programmed for specific tasks, ML systems improve their performance by identifying patterns and making inferences from data.

1. **Deep Learning (DL):**

A specialized subset of ML that uses neural networks with multiple layers (deep neural networks) to analyze and learn from vast amounts of data. DL is particularly effective for tasks like image recognition, natural language processing, and speech recognition**.**