**Slide 1: Introduction to Knowledge Graphs**

**Content:**

* **Structured representation of entities and their relationships.**
* **Entities (Nodes): Represent objects or concepts.**
* **Relationships (Edges): Define connections between entities.**

**Slide 2: Key Features of Knowledge Graphs**

**Content:**

* **Adds meaning to data through semantic understanding.**
* **Connects disparate formats and sources with interoperability.**
* **Adapts to growing data with scalability.**

**Slide 3: Advantages of Knowledge Graphs**

**Content:**

* **Unified view of diverse datasets.**
* **Enables semantic search and logical reasoning.**
* **Enhances integration for web and data systems.**

**Slide 4: Taxonomy in Knowledge Graphs**

**Content:**

* **Provides hierarchical organization of entities.**
* **Uses parent-child relationships to structure knowledge.**
* **Classifies entities into specific groups.**

**Slide 5: Ontology in Knowledge Graphs**

**Content:**

* **Defines properties, rules, and relationships.**
* **Enables reasoning through advanced queries.**
* **Adds semantic depth to data representation.**

**Slide 6: Combining Taxonomy and Ontology**

**Content:**

* **Taxonomy structures; Ontology adds meaning.**
* **Together enable advanced reasoning and insights.**
* **Create frameworks for organizing complex systems.**

**Slide 7: Optimizing Data Integration with Knowledge Graphs**

**Content:**

* **Links related data across multiple sources.**
* **Reduces errors by resolving inconsistencies.**
* **Automates inference of missing data.**

**Slide 8: Applications of Knowledge Graphs**

**Content:**

* **E-Commerce: Personalization and search optimization.**
* **Healthcare: Mapping symptoms, diseases, and treatments.**
* **AI Training: Enriches datasets with contextual understanding.**

**Slide 9: Knowledge Graphs in Web Engineering (1/3)**

**Content:**

* **Integrates real-time data streams with static content.**
* **Organizes and connects data for dynamic systems.**
* **Improves data interoperability across platforms.**

**Slide 10: Knowledge Graphs in Web Engineering (2/3)**

**Content:**

* **Enhances navigation and personalization via semantic search.**
* **Links siloed datasets for unified access.**
* **Simplifies integration for developers and systems.**

**Slide 11: Knowledge Graphs in Web Engineering (3/3)**

**Content:**

* **Offers optimized APIs for structured, queryable data.**
* **Enhances scalability for growing web applications.**
* **Improves content delivery and accessibility.**

**Slide 12: How Knowledge Graphs Help AI**

**Content:**

* **Provides structured, context-rich datasets for training.**
* **Powers decision-making through semantic reasoning.**
* **Improves model accuracy and prediction capabilities.**

**Slide 13: Future of Knowledge Graphs in AI**

**Content:**

* **Advances explainability and trustworthiness in AI.**
* **Enhances integration with next-gen AI models.**
* **Supports real-time, autonomous decision-making.**