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Tutorial

LNCS 9885

Reasoning Web

Logical Foundation of Knowledge Graph
Construction and Query Answering

12th International Summer School 2016
Aberdeen, UK, September 5–9, 2016
Tutorial Lectures

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Reasoning Web: Logical Foundation of Knowledge Graph Construction and Query Answering

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▶ **Made for students, researchers and practitioners interested in Knowledge Graphs, Question Answering, and Semantic Web**
▶ **Thoroughly revised tutorials cover logical foundations for constructing and querying knowledge graphs, linked data, semantics, fuzzy RDF and OWL knowledge bases**
▶ **Original, readable and useful lecture notes**

This volume contains some lecture notes of the 12th Reasoning Web Summer School (RW 2016), held in Aberdeen, UK, in September 2016.

In 2016, the theme of the school was "Logical Foundation of Knowledge Graph Construction and Query Answering". The notion of knowledge graph has become popular since Google started to use it to improve its search engine in 2012. Inspired by the success of Google, knowledge graphs are gaining momentum in the World Wide Web arena. Recent years have witnessed increasing industrial take-ups by other Internet giants, including Facebook's Open Graph and Microsoft's Satori.

The aim of the lecture note is to provide a logical foundation for constructing and querying knowledge graphs. Our journey starts from the introduction of Knowledge Graph as well as its history, and the construction of knowledge graphs by considering both explicit and implicit author intentions. The book will then cover various topics, including how to revise and reuse ontologies (schema of knowledge graphs) in a safe way, how to combine navigational queries with basic pattern matching queries for knowledge graph, how to setup a environment to do experiments on knowledge graphs, how to deal with inconsistencies and fuzziness in ontologies and knowledge graphs, and how to combine machine learning and machine reasoning for knowledge graphs.