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Nota di contenuto	1. Introduction to Natural Language Understanding -- 2. Prerequisites and Glossary for Natural Language Understanding -- 3. Single-turn Natural Language Understanding -- 4. Multi-turn Natural Language Understanding -- 5. Evaluating Natural Language Understanding -- 6. Applications and Case Studies in Natural Language Understanding -- 7. Challenges, Conclusion and Future Direction.
Sommario/riassunto	This book provides a comprehensive introduction to conversational spoken language understanding and surveys recent advances in conversational AI. It guides the reader through the history, current advancements, and future of natural language understanding (NLU) in human-computer interactions. To this end, the book is structured in seven chapters: Introduction to Natural Language Understanding lays

the foundation by tracing the evolution of NLU from early human communication to modern human-computer interactions. Prerequisites and Glossary for Natural Language Understanding then serves as a foundational resource, consolidating essential prerequisites and key terminologies relevant across the book. Single-Turn Natural Language Understanding looks at Single-Turn NLU, focusing on tasks that involve interpreting and processing user inputs in a single interaction, while Multi-Turn Natural Language Understanding moves on systems for extended interactions with users and explores techniques for managing dialogues, using context and integrating external knowledge bases. Next, Evaluating Natural Language Understanding discusses the annotation of datasets and various performance assessment methods, covering different levels of understanding from intent recognition to slot filling and domain classification. Applications and Case Studies in Natural Language Understanding subsequently shows real-world applications of NLU in finance, medicine, and law. Eventually Challenges, Conclusions and Future Directions explores the core obstacles hindering the advancement of NLU, including ambiguity, domain adaptation, data scarcity, and ethical concerns. By understanding these challenges, this chapter highlights the ongoing work needed to advance NLU. This book mainly targets researchers, PhD students, and professionals who are entering this field and look for a state-of-the-art introduction to NLU applied in conversational systems such as chatbots, large language models, or educational systems.
