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Nota di contenuto	Multimedia Content and the Semantic Web; Contents; List of Contributors; Foreword - Rudi Studer; Foreword - A. Murat Tekalp; Introduction; Part One: Knowledge and Multimedia; 1 Multimedia Content Description in MPEG-7 and MPEG-21; 1.1 Multimedia Content Description; 1.2 MPEG-7: Multimedia Content Description Interface; 1.3 MPEG-21: Multimedia Framework; 1.4 Final Remarks; Acknowledgments; References; 2 Ontology Representation and Querying for Realizing Semantics-Driven Applications; 2.1 Introduction; 2.2 Requirements; 2.3 Ontology Representation; 2.4 Ontology Querying; 2.5 Implementation 2.6 Related Work 2.7 Conclusion; References; 3 Adding Multimedia to the Semantic Web: Building and Applying an MPEG-7 Ontology; 3.1 Introduction; 3.2 Building an MPEG-7 Ontology; 3.3 Inferring Semantic Descriptions of Multimedia Content; 3.4 Semantic Querying and Presentation; 3.5 Conclusions; References; Appendix A; Appendix B

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4.2 Knowledge Base Formalization  
4.3 Fuzzy Propositional Rules Inference Engine; 4.4 Demonstration; 4.5 Conclusion and Future Work; References; Part Two: Multimedia Content Analysis; 5 Structure Identification in an Audiovisual Document; 5.1 Introduction; 5.2 Shot Segmentation; 5.3 Evaluation of Shot-Segmentation Algorithms; 5.4 Formal Description of the Video Editing Work; 5.5 Macrosegmentation; 5.6 Conclusion; 5.7 Acknowledgement; References; 6 Object-Based Video Indexing; 6.1 Introduction; 6.2 MPEG-7 as a Normalized Framework for Object-Based Indexing of Video Content  
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6.4 Rough Indexing Paradigm for Object-Based Indexing of Compressed Content; 6.5 Conclusion; References; 7 Automatic Extraction and Analysis of Visual Objects Information; 7.1 Introduction; 7.2 Overview of the Proposed Model; 7.3 Region-Based Representation of Images: The Binary Partition Tree; 7.4 Perceptual Modelling of a Semantic Class; 7.5 Structural Modelling of a Semantic Class; 7.6 Conclusions; Acknowledgements; References; 8 Mining the Semantics of Visual Concepts and Context; 8.1 Introduction  
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8.3 Modelling Context: A Graphical Multinet Model for Learning and Enforcing Context; 8.4 Experimental Set-up and Results; 8.5 Concluding Remarks; Acknowledgement; References; 9 Machine Learning in Multimedia; 9.1 Introduction; 9.2 Graphical Models and Multimedia Understanding; 9.3 Learning Classifiers with Labelled and Unlabelled Data; 9.4 Examples of Graphical Models for Multimedia Understanding and Computer Vision; 9.5 Conclusions; References; Part Three: Multimedia Content Management Systems and the Semantic Web  
10 Semantic Web Applications

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## Sommario/riassunto

The emerging idea of the semantic web is based on the maximum automation of the complete knowledge lifecycle processes: knowledge representation, acquisition, adaptation, reasoning, sharing and use. Text-based based browsers involve a costly information-retrieval process: descriptions are inherently subjective and usage is often confined to the specific application domain for which the descriptions were created. Automatic extracted audiovisual features are, in general, more objective, domain-independent and can be native to the audiovisual content. This book seeks to draw together in one c

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