



Machine Learning for Audio, Image and Video Analysis [Theory and Applications /

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Monografía

Machine Learning involves several scientific domains including mathematics, computer science, statistics and biology, and is an approach that enables computers to automatically learn from data. Focusing on complex media and how to convert raw data into useful information, this book offers both introductory and advanced material in the combined fields of machine learning and image/video processing. The machine learning techniques presented enable readers to address many real world problems involving complex data. Examples covering areas such as automatic speech and handwriting transcription, automatic face recognition, and semantic video segmentation are included, along with detailed introductions to algorithms and examples of their applications. The book is organized in four parts: The first focuses on technical aspects, basic mathematical notions and elementary machine learning techniques. The second provides an extensive survey of most relevant machine learning techniques for media processing, while the third part focuses on applications and shows how techniques are applied in actual problems. The fourth part contains detailed appendices that provide notions about the main mathematical instruments used throughout the text. Students and researchers needing a solid foundation or reference, and practitioners interested in discovering more about the state-of-the-art will find this book invaluable. Examples and problems are based on data and software packages publicly available on the web

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