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Sommario/riassunto

An easily accessible, hands-on approach to digital audio signal processingWith the proliferation of digital audio distribution over digital media, the amount of easily accessible music is ever-growing, requiring new tools for navigating, accessing, and retrieving music in meaningful ways. An understanding of audio content analysis is

essential for the design of intelligent music information retrieval applications and content-adaptive audio processing systems.This book is about how to teach a computer to interpret music signals, thus allowing the design of tools for interacting with music. This book serves as a comprehensive guide on audio content analysis and how to apply it in signal processing and music informatics. Written by a well-known expert in the music industry, An Introduction to Audio Content Analysis ties together topics from audio signal processing and machine learning, showing how to use audio content analysis to pick up musical characteristics automatically. The author clearly explains the analysis of audio signals and the extraction of metadata describing the content of the signal, covering both abstract descriptions of technical properties and musical descriptions such as tempo, harmony and key, musical style, and performance attributes. Musical information is given a separate analysis in each category, whether tonal, pitch, harmony, key, temporal, or tempo, among others.Readers will get access to various analysis algorithms and learn to compare different standard approaches to the same task. The book includes a review of the fundamentals of audio signal processing, psychoacoustics, and music theory.An invaluable guide for newcomers to audio signal processing and industry experts alike, An Introduction to Audio Content Analysis also features downloadable MATLAB files from a companion website, www.AudioContentAnalysis.org, lists of abbreviations and symbols, and references.