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Descrizione fisica	1 online resource (XI, 197 p. 72 illus., 49 illus. in color.)
Disciplina	621.3893
Soggetti	Sound - Recording and reproducing - Digital techniques Python (Computer program language) Acoustic & sound engineering
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Filter Banks -- With a Changing Number of Subbands -- Predictive Coding -- Psychoacoustic Models -- Psychoacoustic Models and Quantization -- Entropy Coding -- The Python Perceptual Audio Coder -- Predictive Lossless Audio Coding -- Scalable Lossless Audio Coding -- Psycho-Acoustic Pre-Filter -- Conclusion.
Sommario/riassunto	This textbook presents the fundamentals of audio coding, used to compress audio and music signals, using Python programs both as examples to illustrate the principles and for experiments for the reader. Together, these programs then form complete audio coders. The author starts with basic knowledge of digital signal processing (sampling, filtering) to give a thorough introduction to filter banks as used in audio coding, and their design methods. He then continues with the next core component, which are psycho-acoustic models. The author finally shows how to design and implement them. Lastly, the author goes on to describe components for more specialized coders, like the Integer-to-Integer MDCT filter bank, and predictive coding for lossless and low delay coding. Included are Python program examples for each section, which illustrate the principles and provide the tools for experiments. Comprehensively explains the fundamentals of filter banks and audio coding; Provides Python examples for each principle

so that completed audio coders are obtained in the language; Includes a suite of classroom materials including exercises, experiments, and examples.