

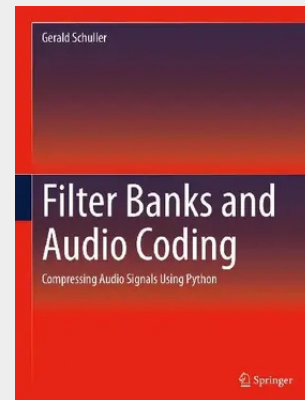
Filter Banks and Audio Coding

Compressing Audio Signals Using Python

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.

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