Müller, Meinard

Information Retrieval for Music and Motion

- First monograph specializing in music and motion retrieval
- Details concepts and algorithms for robust and efficient information retrieval for waveform-based music data and human motion data
- Emphasizes the interdisciplinary character by combining elements from information science, digital signal processing, audio engineering, musicology, and computer graphics
- Highly didactic presentation which makes each part suitable for stand-alone use in specialized graduate courses

A general scenario that has attracted a lot of attention for multimedia information retrieval is based on the query-by-example paradigm: retrieve all documents from a database containing parts or aspects similar to a given data fragment. However, multimedia objects, even though they are similar from a structural or semantic viewpoint, often reveal significant spatial or temporal differences. This makes content-based multimedia retrieval a challenging research field with many unsolved problems. Meinard Müller details concepts and algorithms for robust and efficient information retrieval by means of two different types of multimedia data: waveform-based music data and human motion data. In Part I, he discusses in depth several approaches in music information retrieval, in particular general strategies as well as efficient algorithms for music synchronization, audio matching, and audio structure analysis. He also shows how the analysis results can be used in an advanced audio player to facilitate additional retrieval and browsing functionality. In Part II, he introduces a general and unified framework for motion analysis, retrieval, and classification, highlighting the design of suitable features, the notion of similarity used to compare data streams, and data organization. The detailed chapters at the beginning of each part give consideration to the interdisciplinary character of this field, covering information science, digital signal processing, audio engineering, musicology, and computer graphics.

Springer

1st edition

2007, XVI, 318 p. 136 illus., 39 illus. in color.

Printed book
Hardcover

Printed book
Hardcover
ISBN 978-3-540-74047-6
$ 109,99
Available

Discount group
Professional Books (2)

Product category
Graduate/advanced undergraduate textbook

Other renditions
Softcover
ISBN 978-3-642-09337-1