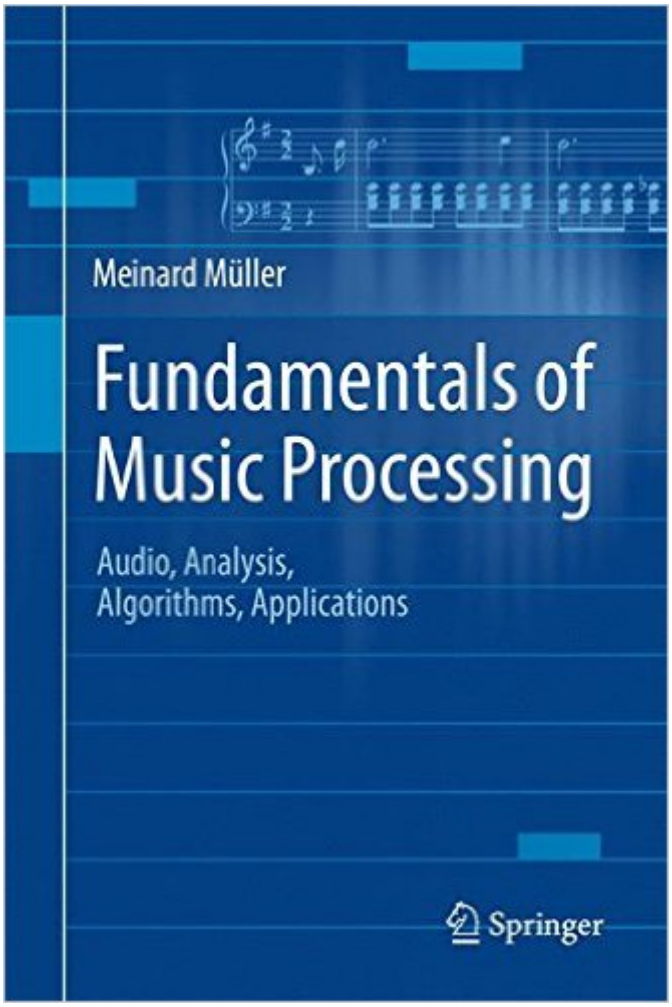
Fundamentals Of Music Processing: Audio, Analysis, Algorithms, Applications



Synopsis

This textbook provides both profound technological knowledge and a comprehensive treatment of essential topics in music processing and music information retrieval. Including numerous examples, figures, and exercises, this book is suited for students, lecturers, and researchers working in audio engineering, computer science, multimedia, and musicology.The book consists of eight chapters. The first two cover foundations of music representations and the Fourier transformâ •concepts that are then used throughout the book. In the subsequent chapters, concrete music processing tasks serve as a starting point. Each of these chapters is organized in a similar fashion and starts with a general description of the music processing scenario at hand before integrating it into a wider context. It then discussesâ •in a mathematically rigorous wayâ •important techniques and algorithms that are generally applicable to a wide range of analysis, classification, and retrieval problems. At the same time, the techniques are directly applied to a specific music processing task. By mixing theory and practice, the bookâ ™s goal is to offer detailed technological insights as well as a deep understanding of music processing applications. Each chapter ends with a section that includes links to the research literature, suggestions for further reading, a list of references, and exercises. The chapters are organized in a modular fashion, thus offering lecturers and readers many ways to choose, rearrange or supplement the material. Accordingly, selected chapters or individual sections can easily be integrated into courses on general multimedia, information science, signal processing, music informatics, or the digital humanities.

Book Information

Hardcover: 487 pages

Publisher: Springer; 1st ed. 2015 edition (July 27, 2015)

Language: English

ISBN-10: 3319219448

ISBN-13: 978-3319219448

Product Dimensions: 6.1 x 1.1 x 9.2 inches

Shipping Weight: 0.3 ounces (View shipping rates and policies)

Average Customer Review: 5.0 out of 5 starsÂ Â See all reviewsÂ (1 customer review)

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Mathematical Analysis

Customer Reviews

A welcome overview of the field by Professor MÃ ller, a leading researcher in music informatics. Packed with diagrams and details -- it’s really comprehensive. A must-have reference.

Fundamentals of Music Processing: Audio, Analysis, Algorithms, Applications Information Processing with Evolutionary Algorithms: From Industrial Applications to Academic Speculations (Advanced Information and Knowledge Processing) Analytics: Data Science, Data Analysis and Predictive Analytics for Business (Algorithms, Business Intelligence, Statistical Analysis, Decision Analysis, Business Analytics, Data Mining, Big Data) A Digital Signal Processing Primer: With Applications to Digital Audio and Computer Music The Design of Innovation: Lessons from and for Competent Genetic Algorithms (Genetic Algorithms and Evolutionary Computation) Algorithms in C++ Part 5: Graph Algorithms (3rd Edition) (Pt.5) Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics and Speech Recognition Deep Learning: Natural Language Processing in Python with Recursive Neural Networks: Recursive Neural (Tensor) Networks in Theano (Deep Learning and Natural Language Processing Book 3) Deep Learning: Natural Language Processing in Python with GLoVe: From Word2Vec to GLoVe in Python and Theano (Deep Learning and Natural Language Processing) Deep Learning: Natural Language Processing in Python with Word2Vec: Word2Vec and Word Embeddings in Python and Theano (Deep Learning and Natural Language Processing Book 1) Fundamentals of Machine Learning for Predictive Data Analytics: Algorithms, Worked Examples, and Case Studies (MIT Press) Artificial Intelligence with Common Lisp: Fundamentals of Symbolic and Numeric Processing Data Structures, Algorithms, And Applications In C++ Operations Research: Applications and Algorithms (with CD-ROM and InfoTrac) Hard Real-Time Computing Systems: Predictable Scheduling Algorithms and Applications (Real-Time Systems Series) Fusion of Neural Networks, Fuzzy Systems and Genetic Algorithms: Industrial Applications (International Series on Computational Intelligence) Efficient Android Threading: Asynchronous Processing Techniques for Android Applications Digital Coding of Waveforms: Principles and Applications to Speech and Video (Prentice-Hall Signal Processing Series) Digital Compression of Still Images and Video (Signal Processing and its Applications) Remote Sensing of Aquatic Coastal Ecosystem Processes: Science and Management Applications (Remote Sensing and Digital Image Processing)