

Mathematics for Multimedia (Applied and Numerical Harmonic Analysis)

By Mladen Victor Wickerhauser



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This textbook presents the mathematics that is foundational to multimedia applications. Featuring a rigorous survey of selected results from algebra and analysis, the work examines tools used to create application software for multimedia signal processing and communication.

Replete with exercises, sample programs in Standard C, and numerous illustrations, **Mathematics for Multimedia** is an ideal textbook for upper undergraduate and beginning graduate students in computer science and mathematics who seek an innovative approach to contemporary mathematics with practical applications. The work may also serve as an invaluable reference for multimedia applications developers and all those interested in the mathematics underlying multimedia design and implementation.



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Mathematics for Multimedia (Applied and Numerical Harmonic Analysis) By Mladen Victor Wickerhauser Bibliography

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Editorial Review

Review

From the reviews:

"The book under review is aimed at providing a comprehensive understanding to undergraduate students who have got beyond Calculus. ... Students in mathematics, computer science and engineering will benefit from the material and mathematical concepts presented in this book." (Carnelia Bejan, IASI Polytechnic Magazine, Vol. 22 (1/4), March-December, 2010)

"This concise textbook on applied Fourier analysis presents the mathematics that is fundamental to applications in digital signal processing. The main emphasis of the author is on practical implementation of algorithms in multimedia applications. Key algorithms are presented in pseudocode and Standard C. ... This well-written textbook on applied Fourier analysis is very convenient for students in applied mathematics and computer science. This book can also serve as useful reference for researchers interested in the mathematics underlying multimedia software design and implementation." (Manfred Tasche, Zentralblatt MATH, Vol. 1183, 2010)

"Aside from introductory material in the first two chapters, chapters are independent, which means that the instructor can tailor the material as needed. The text contains a number of fascinating and beautiful results; having never studied Fourier series or coding theory before, I found myself smiling in admiration at a few of them, and made notes about a couple. The text is clear and develops carefully. Exercises range from easy to challenging, and complete (!) solutions appear in an appendix."

?MAA Reviews

From the Back Cover

This concise textbook presents the mathematics that is foundational to multimedia applications. Featuring a rigorous survey of selected results from algebra and analysis, the work examines tools used to create application software for multimedia signal processing and communication.

Key features include:

- * Over 100 exercises with complete solutions;
- * Useful algorithms presented in pseudocode and Standard C to help readers with programming, experimentation, and the solution of exercises;
- * Numerous illustrations based on data from real studies;
- * Suggestions for further reading at the end of each chapter;
- * A companion website?maintained by the author?providing computer programs described in the book as well as additional references and data files, such as images and sounds, to enhance the reader's understanding of key topics;

- * A supplementary manual?containing several hundred exercises, solutions, and sample programs not included in the book?available to instructors upon request;
- * Minimal prerequisites?only an undergraduate-level knowledge of mathematics, not including statistics, is required.

Mathematics for Multimedia is an ideal textbook for upper undergraduate and beginning graduate students in pure and applied mathematics, engineering, and computer science seeking an innovative approach to contemporary mathematics with practical applications. The work may also serve as a useful reference for multimedia applications developers and other researchers and practitioners interested in the mathematics underlying multimedia software design and implementation.

About the Author
By Mladen Victor Wickerhauser

Users Review

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Lily Winstead:

This Mathematics for Multimedia (Applied and Numerical Harmonic Analysis) book is simply not ordinary book, you have after that it the world is in your hands. The benefit you will get by reading this book will be information inside this e-book incredible fresh, you will get information which is getting deeper anyone read a lot of information you will get. That Mathematics for Multimedia (Applied and Numerical Harmonic Analysis) without we recognize teach the one who reading it become critical in considering and analyzing. Don't always be worry Mathematics for Multimedia (Applied and Numerical Harmonic Analysis) can bring when you are and not make your tote space or bookshelves' turn into full because you can have it inside your lovely laptop even cell phone. This Mathematics for Multimedia (Applied and Numerical Harmonic Analysis) having good arrangement in word as well as layout, so you will not experience uninterested in reading.

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