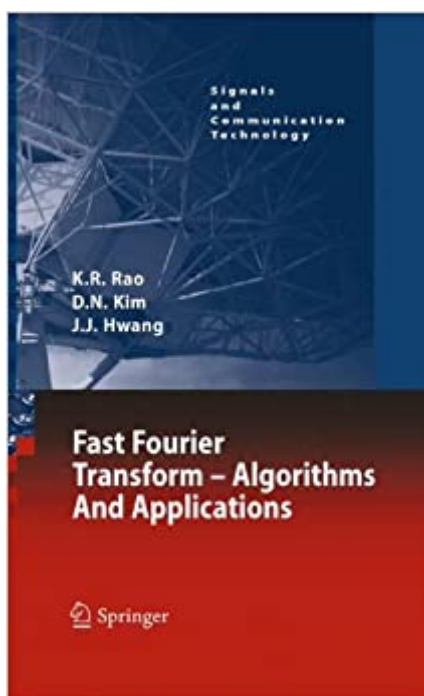The book was found

Fast Fourier Transform - Algorithms And Applications (Signals And Communication Technology)

Synopsis

This book presents an introduction to the principles of the fast Fourier transform. This book covers FFTs, frequency domain filtering, and applications to video and audio signal processing. As fields like communications, speech and image processing, and related areas are rapidly developing, the FFT as one of essential parts in digital signal processing has been widely used. Thus there is a pressing need from instructors and students for a book dealing with the latest FFT topics. This book provides thorough and detailed explanation of important or up-to-date FFTs. It also has adopted modern approaches like MATLAB examples and projects for better understanding of diverse FFTs.

Book Information

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Customer Reviews

From the reviews:The new book Fast Fourier Transform - Algorithms and Applications by Dr. K.R. Rao, Dr. D.N. Kim, and Dr. J.J. Hwang is an engaging look in the world of FFT algorithms and applications. This book not only provides detailed description of a wide-variety of FFT algorithms, gives the mathematical derivations of these algorithms, plentiful helpful flow diagrams illustrating the algorithms, and MATLAB programsÃ â Â the book also presents novel topics in depth (for example, integer FFTs, the non-uniform DFT, phase-only correlation, image and audio watermarking, the curvelet transform, and many more) with insightful motivation, explanation, and numerous examples and programs. The authors also provide insight into issues related to implementation of FFTs on different hardware platforms. Excellent aspects of the book are the

plentiful numerical examples illustrating the properties of the DFT and a most impressive number of applications of the FFT- including applications in communications, image restoration, and descriptions of audio coding standards that rely on the FFT (MPEG, AC-2) to name only a few. The book also supplies a generous number of exercises and computer projects. In addition, throughout the book the authors present and discuss the research literature at length and include many healthy doses of pointers to the literature which provides a pathway for specialized further study.Dr. Ivan W. Selesnick, Polytechnic University, New York, NYÃ¢ ¬Å"The fast Fourier transform (FFT) is an essential tool in applied mathematics and digital signal processing. Ã¢â ¬Â| This monograph on the FFT is mainly written for graduate students and researchers in engineering and science. It consists of 8 chapters, 8 appendices and a comprehensive bibliography.Ã¢â ¬Â• (Manfred Tasche, Zentralblatt MATH, Vol. 1203, 2011)Ã¢â ¬Å"This volume Ã¢â ¬Â| offers an account of the Discrete Fourier Transform (DFT) and its implementation, including the Fast Fourier Transform (FFT). The target audience is clearly instructors and students in engineering Ã¢â ¬Â| . book gives an excellent opportunity to applied mathematicians interested in refreshing their teaching to enrich their presentation of the DFT/FFT with modern applications. The exercises and projects Ã¢â ¬Â| are one of the most important feature of this volume. This is in itself a clear motivation to strongly recommend this volume Ã¢â ¬Â| .Ã¢â ¬Â• (Jean-Pierre Croisille Mathematical Reviews, Issue 2012 k)

Fast Fourier Transform - Algorithms and Applications presents an introduction to the principles of the fast Fourier transform (FFT). It covers FFTs, frequency domain filtering, and applications to video and audio signal processing. As fields like communications, speech and image processing, and related areas are rapidly developing, the FFT as one of the essential parts in digital signal processing has been widely used. Thus there is a pressing need from instructors and students for a book dealing with the latest FFT topics. Fast Fourier Transform - Algorithms and Applications provides a thorough and detailed explanation of important or up-to-date FFTs. It also has adopted modern approaches like MATLAB examples and projects for better understanding of diverse FFTs. Fast Fourier Transform - Algorithms and Applications is designed for senior undergraduate and graduate students, faculty, engineers, and scientists in the field, and self-learners to understand FFTs and directly apply them to their fields, efficiently. It is designed to be both a text and a reference. Thus examples, projects and problems all tied with MATLAB, are provided for grasping the concepts concretely. It also includes references to books and review papers and lists of applications, hardware/software, and useful websites. By including many figures, tables, bock

diagrams and graphs, this book helps the reader understand the concepts of fast algorithms readily and intuitively. It provides new MATLAB functions and MATLAB source codes. The material in Fast Fourier Transform - Algorithms and Applications is presented without assuming any prior knowledge of FFT. This book is for any professional who wants to have a basic understanding of the latest developments in and applications of FFT. It provides a good reference for any engineer planning to work in this field, either in basic implementation or in research and development.

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