Image Processing: Tensor Transform and Discrete Tomography with MATLAB ®

Artyom M. Grigoryan, Merughan M. Grigoryan

Image Processing: Tensor Transform and Discrete Tomography with MATLAB ®

Artyom M. Grigoryan, Merughan M. Grigoryan

Image Processing: Tensor Transform and Discrete Tomography with MATLAB ® Artyom M. Grigoryan, Merughan M. Grigoryan

Focusing on mathematical methods in computer tomography, **Image Processing: Tensor Transform and Discrete Tomography with MATLAB®** introduces novel approaches to help in solving the problem of image reconstruction on the Cartesian lattice. Specifically, it discusses methods of image processing along parallel rays to more quickly and accurately reconstruct images from a finite number of projections, thereby avoiding overradiation of the body during a computed tomography (CT) scan.

The book presents several new ideas, concepts, and methods, many of which have not been published elsewhere. New concepts include methods of transferring the geometry of rays from the plane to the Cartesian lattice, the point map of projections, the particle and its field function, and the statistical model of averaging. The authors supply numerous examples, MATLAB®-based programs, end-of-chapter problems, and experimental results of implementation.

The main approach for image reconstruction proposed by the authors differs from existing methods of back-projection, iterative reconstruction, and Fourier and Radon filtering. In this book, the authors explain how to process each projection by a system of linear equations, or linear convolutions, to calculate the corresponding part of the 2-D tensor or paired transform of the discrete image. They then describe how to calculate the inverse transform to obtain the reconstruction. The proposed models for image reconstruction from projections are simple and result in more accurate reconstructions.

Introducing a new theory and methods of image reconstruction, this book provides a solid grounding for those interested in further research and in obtaining new results. It encourages readers to develop effective applications of these methods in CT.

Download and Read Free Online Image Processing: Tensor Transform and Discrete Tomography with MATLAB ® Artyom M. Grigoryan, Merughan M. Grigoryan

From reader reviews:

Annette Puente:

Spent a free time for you to be fun activity to complete! A lot of people spent their down time with their family, or their very own friends. Usually they accomplishing activity like watching television, likely to beach, or picnic in the park. They actually doing same thing every week. Do you feel it? Will you something different to fill your personal free time/ holiday? May be reading a book can be option to fill your cost-free time/ holiday. The first thing you ask may be what kinds of book that you should read. If you want to try look for book, may be the reserve untitled Image Processing: Tensor Transform and Discrete Tomography with MATLAB ® can be very good book to read. May be it might be best activity to you.

Francis King:

The particular book Image Processing: Tensor Transform and Discrete Tomography with MATLAB ® has a lot details on it. So when you read this book you can get a lot of help. The book was authored by the very famous author. This articles author makes some research just before write this book. This particular book very easy to read you can obtain the point easily after perusing this book.

Ernest Nunez:

The book untitled Image Processing: Tensor Transform and Discrete Tomography with MATLAB ® contain a lot of information on it. The writer explains your ex idea with easy method. The language is very simple to implement all the people, so do definitely not worry, you can easy to read the item. The book was compiled by famous author. The author brings you in the new period of time of literary works. It is possible to read this book because you can continue reading your smart phone, or product, so you can read the book with anywhere and anytime. In a situation you wish to purchase the e-book, you can wide open their official web-site and order it. Have a nice read.

Iva Simmon:

Some individuals said that they feel bored when they reading a publication. They are directly felt the idea when they get a half parts of the book. You can choose the actual book Image Processing: Tensor Transform and Discrete Tomography with MATLAB ® to make your personal reading is interesting. Your personal skill of reading proficiency is developing when you just like reading. Try to choose simple book to make you enjoy to read it and mingle the idea about book and examining especially. It is to be very first opinion for you to like to available a book and read it. Beside that the reserve Image Processing: Tensor Transform and Discrete Tomography with MATLAB ® can to be your new friend when you're really feel alone and confuse in what must you're doing of their time.

Download and Read Online Image Processing: Tensor Transform and Discrete Tomography with MATLAB ® Artyom M. Grigoryan, Merughan M. Grigoryan #XHINSYL9FMT

Read Image Processing: Tensor Transform and Discrete Tomography with MATLAB ® by Artyom M. Grigoryan, Merughan M. Grigoryan for online ebook

Image Processing: Tensor Transform and Discrete Tomography with MATLAB ® by Artyom M. Grigoryan, Merughan M. Grigoryan Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Image Processing: Tensor Transform and Discrete Tomography with MATLAB ® by Artyom M. Grigoryan, Merughan M. Grigoryan books to read online.

Online Image Processing: Tensor Transform and Discrete Tomography with MATLAB ® by Artyom M. Grigoryan, Merughan M. Grigoryan ebook PDF download

Image Processing: Tensor Transform and Discrete Tomography with MATLAB ® by Artyom M. Grigoryan, Merughan M. Grigoryan Doc

Image Processing: Tensor Transform and Discrete Tomography with MATLAB ® by Artyom M. Grigoryan, Merughan M. Grigoryan Mobipocket

Image Processing: Tensor Transform and Discrete Tomography with MATLAB ® by Artyom M. Grigoryan, Merughan M. Grigoryan EPub