Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library)

By James F. Peters

Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library) By James F. Peters

This book carries forward recent work on visual patterns and structures in digital images and introduces a near set-based a topology of digital images. Visual patterns arise naturally in digital images viewed as sets of non-abstract points endowed with some form of proximity (nearness) relation. Proximity relations make it possible to construct uniform topologies on the sets of points that constitute a digital image. In keeping with an interest in gaining an understanding of digital images themselves as a rich source of patterns, this book introduces the basics of digital images from a computer vision perspective. In parallel with a computer vision perspective on digital images, this book also introduces the basics of proximity spaces. Not only the traditional view of spatial proximity relations but also the more recent descriptive proximity relations are considered. The beauty of the descriptive proximity approach is that it is possible to discover visual set patterns among sets that are non-overlapping and non-adjacent spatially. By combining the spatial proximity and descriptive proximity approaches, the search for salient visual patterns in digital images is enriched, deepened and broadened. A generous provision of Matlab and Mathematica scripts are used in this book to lay bare the fabric and essential features of digital images for those who are interested in finding visual patterns in images. The combination of computer vision techniques and topological methods lead to a deep understanding of images.

Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library)

By James F. Peters

Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library) By James F. Peters

This book carries forward recent work on visual patterns and structures in digital images and introduces a near set-based a topology of digital images. Visual patterns arise naturally in digital images viewed as sets of non-abstract points endowed with some form of proximity (nearness) relation. Proximity relations make it possible to construct uniform topologies on the sets of points that constitute a digital image. In keeping with an interest in gaining an understanding of digital images themselves as a rich source of patterns, this book introduces the basics of digital images from a computer vision perspective. In parallel with a computer vision perspective on digital images, this book also introduces the basics of proximity spaces. Not only the traditional view of spatial proximity relations but also the more recent descriptive proximity relations are considered. The beauty of the descriptive proximity approach is that it is possible to discover visual set patterns among sets that are non-overlapping and non-adjacent spatially. By combining the spatial proximity and descriptive proximity approaches, the search for salient visual patterns in digital images is enriched, deepened and broadened. A generous provision of Matlab and Mathematica scripts are used in this book to lay bare the fabric and essential features of digital images for those who are interested in finding visual patterns in images. The combination of computer vision techniques and topological methods lead to a deep understanding of images.

Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library) By James F. Peters Bibliography

- Sales Rank: #4418503 in Books
- Published on: 2014-01-29
- Original language: English
- Number of items: 1
- Dimensions: 9.20" h x 1.10" w x 6.20" l, 1.60 pounds
- Binding: Hardcover
- 411 pages

Editorial Review

Review

From the reviews:

"This book presents the recent research results of visual patterns in proximity spaces in a very easy to follow way. … a research exposition for mathematicians, computer scientists, engineers and for all who want to familiarize with the recent research in this field. It can be also treated as the textbook for students and for all who want to deeply understand images through their topology. It can be used for a self studying and as a course book as well." (Agnieszka Lisowska, zbMATH, Vol. 1295, 2014)

From the Back Cover

This book carries forward recent work on visual patterns and structures

in digital images and introduces a near set-based a topology of digital

images. Visual patterns arise naturally in digital images viewed as sets

of non-abstract points endowed with some form of proximity (nearness)

relation. Proximity relations make it possible to construct uniform topolo-

gies on the sets of points that constitute a digital image. In keeping with

an interest in gaining an understanding of digital images themselves as a

rich source of patterns, this book introduces the basics of digital images

from a computer vision perspective. In parallel with a computer vision

perspective on digital images, this book also introduces the basics of prox-

imity spaces. Not only the traditional view of spatial proximity relations

but also the more recent descriptive proximity relations are considered.

The beauty of the descriptive proximity approach is that it is possible to

discover visual set patterns among sets that are non-overlapping and non-

adjacent spatially. By combining the spatial proximity and descriptive<

proximity approaches, the search for salient visual patterns in digital im-

ages is enriched, deepened and broadened. A generous provision of Matlab

and Mathematica scripts are used in this book to lay bare the fabric and

essential features of digital images for those who are interested in finding

visual patterns in images. The combination of computer vision techniques

and topological methods lead to a deep understanding of images.

Users Review

From reader reviews:

Mary Ehlers:

Why don't make it to become your habit? Right now, try to prepare your time to do the important work, like looking for your favorite reserve and reading a book. Beside you can solve your trouble; you can add your knowledge by the book entitled Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library). Try to the actual book Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library) as your pal. It means that it can being your friend when you experience alone and beside regarding course make you smarter than before. Yeah, it is very fortuned to suit your needs. The book makes you far more confidence because you can know everything by the book. So , we should make new experience and knowledge with this book.

Daryl Biddle:

Book is usually written, printed, or outlined for everything. You can know everything you want by a reserve. Book has a different type. As you may know that book is important point to bring us around the world. Next to that you can your reading skill was fluently. A guide Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library) will make you to become smarter. You can feel more confidence if you can know about everything. But some of you think which open or reading any book make you bored. It isn't make you fun. Why they might be thought like that? Have you in search of best book or suitable book with you?

Jesse Kennedy:

Reading can called head hangout, why? Because when you find yourself reading a book specially book entitled Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library) your thoughts will drift away trough every dimension, wandering in each aspect that maybe mysterious for but surely can become your mind friends. Imaging just about every word written in a e-book then become one type conclusion and explanation this maybe you never get ahead of. The Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library) giving you another experience more than blown away your brain but also giving you useful details for your better life in this era. So now let us present to you the relaxing pattern the following is your body and mind will be pleased when you are finished examining it, like winning a casino game. Do you want to try this extraordinary shelling out spare time activity?

Kevin Dobson:

You may get this Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library) by visit the bookstore or Mall. Just simply viewing or reviewing it could possibly to be your solve trouble if you get difficulties for ones knowledge. Kinds of this e-book are various. Not only by means of written or printed and also can you enjoy this book by means of e-book. In the modern era like now, you just looking because of your mobile phone and searching what your problem. Right now, choose your own personal ways to get more information about your guide. It is most important to arrange you to ultimately make your knowledge are still upgrade. Let's try to choose right ways for you.

Download and Read Online Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library) By James F. Peters #3Z0N25RDPJL

Read Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library) By James F. Peters for online ebook

Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library) By James F. Peters 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 Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library) By James F. Peters books to read online.

Online Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library) By James F. Peters ebook PDF download

Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library) By James F. Peters Doc

Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library) By James F. Peters Mobipocket

Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library) By James F. Peters EPub

3Z0N25RDPJL: Topology of Digital Images: Visual Pattern Discovery in Proximity Spaces (Intelligent Systems Reference Library) By James F. Peters