



Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series)

From Brand: Chapman and Hall/CRC

Download now

Read Online 

Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series)

From Brand: Chapman and Hall/CRC

Going beyond performing simple analyses, researchers involved in the highly dynamic field of computational intelligent data analysis design algorithms that solve increasingly complex data problems in changing environments, including economic, environmental, and social data. **Computational Intelligent Data Analysis for Sustainable Development** presents novel methodologies for automatically processing these types of data to support rational decision making for sustainable development. Through numerous case studies and applications, it illustrates important data analysis methods, including mathematical optimization, machine learning, signal processing, and temporal and spatial analysis, for quantifying and describing sustainable development problems.

With a focus on integrated sustainability analysis, the book presents a large-scale quadratic programming algorithm to expand high-resolution input-output tables from the national scale to the multinational scale to measure the carbon footprint of the entire trade supply chain. It also quantifies the error or dispersion between different reclassification and aggregation schemas, revealing that aggregation errors have a high concentration over specific regions and sectors.

The book summarizes the latest contributions of the data analysis community to climate change research. A profuse amount of climate data of various types is available, providing a rich and fertile playground for future data mining and machine learning research. The book also pays special attention to several critical challenges in the science of climate extremes that are not handled by the current generation of climate models. It discusses potential conceptual and methodological directions to build a close integration between physical understanding, or physics-based modeling, and data-driven insights.

The book then covers the conservation of species and ecologically valuable land. A case study on the Pennsylvania Dirt and Gravel Roads Program demonstrates that multiple-objective linear programming is a more versatile and efficient approach than the widely used benefit targeting selection process.

Moving on to renewable energy and the need for smart grids, the book explores how the ongoing transformation to a sustainable energy system of renewable sources leads to a paradigm shift from demand-driven generation to generation-driven demand. It shows how to maximize renewable energy as electricity by building a supergrid or mixing renewable sources with demand management and storage. It also presents intelligent data analysis for real-time detection of disruptive events from power system frequency data collected using an existing Internet-based frequency monitoring network as well as evaluates a set of computationally intelligent techniques for long-term wind resource assessment.

In addition, the book gives an example of how temporal and spatial data analysis tools are used to gather knowledge about behavioral data and address important social problems such as criminal offenses. It also applies constraint logic programming to a planning problem: the environmental and social impact assessment of the regional energy plan of the Emilia-Romagna region of Italy.

Sustainable development problems, such as global warming, resource shortages, global species loss, and pollution, push researchers to create powerful data analysis approaches that analysts can then use to gain insight into these issues to support rational decision making. This volume shows both the data analysis and sustainable development communities how to use intelligent data analysis tools to address practical problems and encourages researchers to develop better methods.

 [Download Computational Intelligent Data Analysis for Sustai ...pdf](#)

 [Read Online Computational Intelligent Data Analysis for Sust ...pdf](#)

Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series)

From Brand: Chapman and Hall/CRC

Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series) From Brand: Chapman and Hall/CRC

Going beyond performing simple analyses, researchers involved in the highly dynamic field of computational intelligent data analysis design algorithms that solve increasingly complex data problems in changing environments, including economic, environmental, and social data. **Computational Intelligent Data Analysis for Sustainable Development** presents novel methodologies for automatically processing these types of data to support rational decision making for sustainable development. Through numerous case studies and applications, it illustrates important data analysis methods, including mathematical optimization, machine learning, signal processing, and temporal and spatial analysis, for quantifying and describing sustainable development problems.

With a focus on integrated sustainability analysis, the book presents a large-scale quadratic programming algorithm to expand high-resolution input-output tables from the national scale to the multinational scale to measure the carbon footprint of the entire trade supply chain. It also quantifies the error or dispersion between different reclassification and aggregation schemas, revealing that aggregation errors have a high concentration over specific regions and sectors.

The book summarizes the latest contributions of the data analysis community to climate change research. A profuse amount of climate data of various types is available, providing a rich and fertile playground for future data mining and machine learning research. The book also pays special attention to several critical challenges in the science of climate extremes that are not handled by the current generation of climate models. It discusses potential conceptual and methodological directions to build a close integration between physical understanding, or physics-based modeling, and data-driven insights.

The book then covers the conservation of species and ecologically valuable land. A case study on the Pennsylvania Dirt and Gravel Roads Program demonstrates that multiple-objective linear programming is a more versatile and efficient approach than the widely used benefit targeting selection process.

Moving on to renewable energy and the need for smart grids, the book explores how the ongoing transformation to a sustainable energy system of renewable sources leads to a paradigm shift from demand-driven generation to generation-driven demand. It shows how to maximize renewable energy as electricity by building a supergrid or mixing renewable sources with demand management and storage. It also presents intelligent data analysis for real-time detection of disruptive events from power system frequency data collected using an existing Internet-based frequency monitoring network as well as evaluates a set of computationally intelligent techniques for long-term wind resource assessment.

In addition, the book gives an example of how temporal and spatial data analysis tools are used to gather knowledge about behavioral data and address important social problems such as criminal offenses. It also applies constraint logic programming to a planning problem: the environmental and social impact assessment of the regional energy plan of the Emilia-Romagna region of Italy.

Sustainable development problems, such as global warming, resource shortages, global species loss, and pollution, push researchers to create powerful data analysis approaches that analysts can then use to gain insight into these issues to support rational decision making. This volume shows both the data analysis and sustainable development communities how to use intelligent data analysis tools to address practical problems and encourages researchers to develop better methods.

Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series) From Brand: Chapman and Hall/CRC Bibliography

- Sales Rank: #4114901 in Books
- Brand: Brand: Chapman and Hall/CRC
- Published on: 2013-04-04
- Original language: English
- Number of items: 1
- Dimensions: 9.10" h x 1.20" w x 6.10" l, 1.65 pounds
- Binding: Hardcover
- 440 pages

 [Download Computational Intelligent Data Analysis for Sustai ...pdf](#)

 [Read Online Computational Intelligent Data Analysis for Sust ...pdf](#)

Download and Read Free Online Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series) From Brand: Chapman and Hall/CRC

Editorial Review

About the Author

Ting Yu, Ph.D., is an honorary research fellow in the Integrated Sustainability Analysis Group at the University of Sydney. He is also a transport modeler for the Transport for NSW. His research interests include machine learning, data mining, parallel computing, applied economics, and sustainability analysis. He earned a Ph.D. in computing science from the University of Technology, Sydney.

Nitesh Chawla, Ph.D., is an associate professor in the Department of Computer Science and Engineering, director of the Interdisciplinary Center for Network Science and Applications, and director of the Data Inference Analysis and Learning Lab at the University of Notre Dame. A recipient of multiple awards for research and teaching, Dr. Chawla is chair of the IEEE Computational Intelligence Society Data Mining Technical Committee and associate editor of *IEEE Transactions on Systems, Man and Cybernetics (Part B)* and *Pattern Recognition Letters*. His research focuses on machine learning, data mining, and network science.

Simeon Simoff, Ph.D., is dean of the School of Computing, Engineering and Mathematics at the University of Western Sydney. He is also a founding director and fellow of the Institute of Analytics Professionals of Australia. He serves on the American Society of Civil Engineering Technical Committees on Data and Information Management and on Intelligent Computing and is an editor of the Australian Computer Society's *Conferences in Research and Practice in Information Technology*.

Users Review

From reader reviews:

Dolores Schreiber:

In this 21st century, people become competitive in every single way. By being competitive now, people have to do something to make these survive, being in the middle of the crowded place and notice through surrounding. One thing that at times many people have underestimated this for a while is reading. That's why, by reading a reserve your ability to survive increase then having chance to stand up than other is high. For yourself who want to start reading a new book, we give you this particular Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series) book as basic and daily reading publication. Why, because this book is greater than just a book.

Donald Foster:

The guide with title Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series) includes a lot of information that you can study it. You can get a lot of advantage after read this book. This specific book exist new know-how the information

that exist in this publication represented the condition of the world currently. That is important to you to learn how the improvement of the world. This kind of book will bring you in new era of the internationalization. You can read the e-book on your own smart phone, so you can read the item anywhere you want.

Joan Beverly:

Your reading sixth sense will not betray you actually, why because this Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series) book written by well-known writer who knows well how to make book which can be understood by anyone who all read the book. Written within good manner for you, dripping every ideas and publishing skill only for eliminate your hunger then you still doubt Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series) as good book not simply by the cover but also from the content. This is one reserve that can break don't assess book by its protect, so do you still needing one more sixth sense to pick this kind of!? Oh come on your studying sixth sense already said so why you have to listening to one more sixth sense.

Robert Long:

A lot of e-book has printed but it takes a different approach. You can get it by world wide web on social media. You can choose the best book for you, science, comedy, novel, or whatever by searching from it. It is known as of book Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series). Contain your knowledge by it. Without making the printed book, it could possibly add your knowledge and make an individual happier to read. It is most crucial that, you must aware about publication. It can bring you from one destination to other place.

Download and Read Online Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series) From Brand: Chapman and Hall/CRC #WMUE61I7R0P

Read Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series) From Brand: Chapman and Hall/CRC for online ebook

Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series) From Brand: Chapman and Hall/CRC 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 Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series) From Brand: Chapman and Hall/CRC books to read online.

Online Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series) From Brand: Chapman and Hall/CRC ebook PDF download

Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series) From Brand: Chapman and Hall/CRC Doc

Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series) From Brand: Chapman and Hall/CRC Mobipocket

Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series) From Brand: Chapman and Hall/CRC EPub

WMUE61I7R0P: Computational Intelligent Data Analysis for Sustainable Development (Chapman & Hall/CRC Data Mining and Knowledge Discovery Series) From Brand: Chapman and Hall/CRC