

Fast Centroid Algorithm For Determining The Surface

A comprehensive review of the most recent applications of intelligent multi-modal data processing Intelligent Multi-Modal Data Processing contains a review of the most recent applications of data processing. The Editors and contributors – noted experts on the topic – offer a review of the new and challenging areas of multimedia data processing as well as state-of-the-art algorithms to solve the problems in an intelligent manner. The text provides a clear understanding of the real-life implementation of different statistical theories and explains how to implement various statistical theories. Intelligent Multi-Modal Data Processing is an authoritative guide for developing innovative research ideas for interdisciplinary research practices. Designed as a practical resource, the book contains tables to compare statistical analysis results of a novel technique to that of the state-of-the-art techniques and illustrations in the form of algorithms to establish a pre-processing and/or post-processing technique for model building. The book also contains images that show the efficiency of the algorithm on standard data set. This important book: Includes an in-depth analysis of the state-of-the-art applications of signal and data processing Contains contributions from noted experts in the field Offers information on hybrid differential evolution for optimal multilevel image thresholding Presents a fuzzy decision based multi-objective evolutionary method for video summarisation Written for students of technology and management, computer scientists and professionals in information technology, Intelligent Multi-Modal Data Processing brings together in one volume the range of multi-modal data processing.
"This book disseminates current information on multimedia retrieval, advancing the field of multimedia databases, and educating the multimedia database community on machine learning techniques for adaptive multimedia retrieval research, design and applications"--Provided by publisher.
The book presents selected research papers on current developments in the field of soft computing and signal processing from the International Conference on Soft Computing and Signal Processing (ICSCSP 2018). It includes papers on current topics such as soft sets, rough sets, fuzzy logic, neural networks, genetic algorithms and machine learning, discussing various aspects of these topics, like technological, product implementation, contemporary research as well as application issues.
This new edition's CD-ROM now has both the source code, and a graphic interface to make it easier to use.
Progress in Computing, Analytics and Networking
Advanced Computing and Communication Technologies
Festschrift for Martin Grötschel
Feature Extraction
Personal Satellite Services. Next-Generation Satellite Networking and Communication Systems
Advances in Computational Collective Intelligence

The third international conference on INformation Systems Design and Intelligent Applications (INDIA – 2016) held in Visakhapatnam, India during January 8-9, 2016. The book covers all aspects of information system design, computer science and technology, general sciences, and educational research. Upon a double blind review process, a number of high quality papers are selected and collected in the book, which is composed of three different volumes, and covers a variety of topics, including natural language processing, artificial intelligence, security and privacy, communications, wireless and sensor networks, microelectronics, circuit and systems, machine learning, soft computing, mobile computing and applications, cloud computing, software engineering, graphics and image processing, rural engineering, e-commerce, e-governance, business computing, molecular computing, nano-computing, chemical computing, intelligent computing for GIS and remote sensing, bio-informatics and bio-computing. These fields are not only limited to computer researchers but also include mathematics, chemistry, biology, bio-chemistry, engineering, statistics, and all others in which computer techniques may assist.
This text is intended to help readers understand and construct machine vision systems that perform useful tasks, based on the state of the art. It covers fundamentals drawn from image processing and computer graphics to the methods of applied machine vision techniques. The text is useful as a short course supplement, as a self-study guide, or as a primary or supplementary text in an advanced undergraduate or graduate course.
Focuses on fields such as consensus and voting theory, clustering, location theory, mathematical biology, and optimization that have seen an upsurge of exciting works over the years using discrete models in modern applications. This book discusses advances in the fields, highlighting the approach of cross-fertilization of ideas across disciplines.
The World Wide Web can be considered a huge library that in consequence needs a capable librarian responsible for the classification and retrieval of documents as well as the mediation between library resources and users. Based on this idea, the concept of the "Librarian of the Web" is introduced which comprises novel, librarian-inspired methods and technical solutions to decentrally search for text documents in the web using peer-to-peer technology. The concept's implementation in the form of an interactive peer-to-peer client, called "WebEngine", is elaborated on in detail. This software extends and interconnects common web servers creating a fully integrated, decentralised and self-organising web search system on top of the existing web structure. Thus, the web is turned into its own powerful search engine without the need for any central authority. This book is intended for researchers and practitioners having a solid background in the fields of Information Retrieval and Web Mining.
Artificial Intelligence and Soft Computing
Applied Data Mining
Computer Vision – ACCV 2016 Workshops
Proceedings of Third International Conference INDIA 2016, Volume 2
Proceedings of ICACIn 2021
Microbial Functional Genomics
Advancements in Adaptive Optics
The two-volume set LNAI 8397 and LNAI 8398 constitutes the refereed proceedings of the 6th Asian Conference on Intelligent Information and Database Systems, ACIHDS 2014, held in Bangkok, Thailand, in April 2014. The 125 revised papers presented were carefully reviewed and selected from 300 submissions. The papers address the following topics: natural language and text processing, intelligent information retrieval, semantic Web, social networks and recommendation systems, intelligent database systems, decision support systems, computer vision techniques, and machine learning and data mining. The papers are organized in topical sections on multiple model approach to machine learning, MMAML 2014, computational intelligence, CI 2014, engineering knowledge and semantic systems, IWEKSS 2014, innovations in intelligent computation and applications, IICA 2014, modeling and optimization techniques in information systems, database systems and industrial systems, MOT 2014, innovation via collective intelligences and globalization in business management, ICIGBM 2014, intelligent supply chains, ISC 2014, and human motion: acquisition, processing, analysis, synthesis and visualization for massive datasets, HMMD 2014.
The three-volume set, consisting of LNCS 10116, 10117, and 10118, contains carefully reviewed and selected papers presented at 17 workshops held in conjunction with the 13th Asian Conference on Computer Vision, ACCV 2016, in Taipei, Taiwan in November 2016. The 134 full papers presented were selected from 223 submissions. LNCS 10116 contains the papers selected
This book constitutes the refereed proceedings of the 11th IFIP TC 12 International Conference on Intelligent Information Processing, IIP 2020, held in Hangzhou, China, in July 2020. The 24 full papers and 5 short papers presented were carefully reviewed and selected from 36 submissions. They are organized in topical sections on machine learning; multi-agent system; recommendation system; social computing; brain computer integration; pattern recognition; and computer vision and image understanding.
This book constitutes the refereed proceedings of the 9th International Conference on Ubiquitous Computing, UbiComp 2007. It covers all current issues in ubiquitous, pervasive and handheld computing systems and their applications, including tools and techniques for designing, implementing, and evaluating ubiquitous computing systems; mobile, wireless, and ad hoc networking infrastructures for ubiquitous computing; privacy, security, and trust in ubiquitous and pervasive systems.
11th IFIP TC 12 International Conference, IIP 2020, Hangzhou, China, July 3–6, 2020, Proceedings
6th Asian Conference, ACIHDS 2014, Bangkok, Thailand, April 7-9, 2014, Proceedings, Part I
Green Energy and Networking
Technologies Applications and Perspectives
Theory and Practice
Statistical Methods for Business and Industry
Facets of Combinatorial Optimization
This book constitutes the refereed post-conference proceedings of the 7th International Conference on Green Energy and Networking, GreeNets 2020, held in Harbin, China, in June 2020. Due to COVID-19 pandemic the conference was held virtually. The 35 full papers were selected from 87 submissions and are grouped in tracks on Green Communication; Green Energy; and Green Networking.
Microbial Functional Genomics offers a timely summary of the principles, approaches, and applications. It presents a comprehensive review of microbial functional genomics, covering microbial diversity, microbial genome sequencing, genomic technologies, genome-wide functional analysis, applied functional genomics, and future directions. An introduction will offer a definition of the field and an overview of the historical and comparative genomics aspects.
Martin Grötschel is one of the most influential mathematicians of our time. He has received numerous honors and holds a number of key positions in the international mathematical community. He celebrated his 65th birthday on September 10, 2013. Martin Grötschel's doctoral contribution tree 1983–2012, i.e., the first 30 years, features 39 children, 74 grandchildren, 24 great-grandchildren and 2 great-great-grandchildren, a total of 139 doctoral descendants. This book starts with a personal tribute to Martin Grötschel by the editors (Part I), a contribution by his very special "predecessor" Manfred Padberg on "Facets and Rank of Integer Polyhedra" (Part II), and the doctoral descendant tree 1983–2012 (Part III). The core of this book (Part IV) contains 16 contributions, each of which is coauthored by at least one doctoral descendant. The sequence of the articles starts with contributions to the theory of mathematical optimization, including polyhedral combinatorics, extended formulations, mixed-integer convex optimization, super classes of perfect graphs, efficient algorithms for subtree-telesceners, junctions in acyclic graphs and preemptive restricted strip covering, as well as efficient approximation of non-preemptive restricted strip covering. Combinations of new theoretical insights with algorithms and experiments deal with network design problems, combinatorial optimization problems with submodular objective functions and more general mixed-integer nonlinear optimization problems. Applications include VLSI layout design, systems biology, wireless network design, mean-risk optimization and gas network optimization. Computational studies include a semidefinite branch and cut approach for the max k-cut problem, mixed-integer nonlinear optimal control, and mixed-integer linear optimization for scheduling and routing of fly-in safari planes. The two closing articles are devoted to computational advances in general mixed integer linear optimization, the first by scientists working in industry, the second by scientists working in academia. These articles reflect the "scientific facets" of Martin Grötschel who has set standards in theory, computation and applications.
This volume contains selected papers presented at the 10th International Conference on Advanced Computing and Communication Technologies (10th ICACCT 2016), technically sponsored by Institution of Electronics and Telecommunication Engineers (India), held during 18–20 November 2016 at Asia Pacific Institute of Information Technology, Panipat, India. The volume reports latest research on a wide range of topics spanning theory, system, applications and case studies in the fields of computing and communication technologies. Topics covered are robotics, computational intelligence encompassing fuzzy logic, neural networks, GA and evolutionary computing, applications, knowledge representation, data encryption, distributed computing, data analytics and visualization, knowledge representation, wireless sensor networks, MEM sensor design, analog circuit, statistical machine translation, cellular automata and antenna design. The volume has 31 chapters, including an invited paper on swarm robotics, grouped into three parts, viz., Advanced Computing, Communication Technologies, and Micro Electronics and Antenna Design. The volume is directed to researchers and practitioners aspiring to solve practical issues, particularly applications of the theories of computational intelligence, using recent advances in computing and communication technologies.
Intelligent Information and Database Systems
Soft Computing and Signal Processing
21st International Conference on Theory and Practice of Digital Libraries, TPDL 2017, Thessaloniki, Greece, September 18-21, 2017, Proceedings
Recent Advances in Information and Communication Technology 2018
Proceedings of International Conference on Computational Intelligence and Data Engineering
Fundamentals of Machine Vision
Doppler Radar Meteorological Observations: WSR-88D products and algorithms
This book is both a reference for engineers and scientists and a teaching resource, featuring tutorial chapters and research papers on feature extraction. Until now there has been insufficient consideration of feature selection algorithms, no unified presentation of leading methods, and no systematic comparisons.
This book constitutes the proceedings of the 21st International Conference on Theory and Practice of Digital Libraries, TPDL 2017, held in Thessaloniki, Greece, in September 2017. The 39 full papers, 11 short papers, and 10 poster papers presented in this volume were carefully reviewed and selected from 106 submissions. In addition the book contains 7 doctoral consortium papers. The contributions are organized in topical sections named: linked data; corpora; data in digital libraries; quality in digital libraries; digital humanities; entities; scholarly communication; sentiment analysis; information behavior; information retrieval.
This book constitutes refereed proceedings of the 12th International Conference on International Conference on Computational Collective Intelligence, ICCCI 2020, held in Da Nang, Vietnam, in November – December 2020. Due to the COVID-19 pandemic the conference was held online. The 68 papers were thoroughly reviewed and selected from 314 submissions. The papers are organized according to the following topical sections: data mining and machine learning; deep learning and applications for industry 4.0; recommender systems; computer vision techniques; decision support and control systems; intelligent management information systems; innovations in intelligent systems; intelligent modeling and simulation approaches for games and real world systems; experience enhanced intelligence to IoT; data driven IoT for smart society; applications of collective intelligence; natural language processing; low resource languages processing; computational collective intelligence and natural language processing.
Principles of Adaptive Optics describes the foundations, principles, and applications of adaptive optics (AO) and its enabling technologies. This leading textbook addresses the fundamentals of AO at the core of astronomy, high-energy lasers, biomedical imaging, and optical communications. Key Features: Numerous examples to explain and support the underlying principles Hundreds of new references to support the topics that are addressed End-of-chapter questions and exercises A complete system design example threaded through each chapter as new material is introduced
Simplex Optimization
6th International Conference, PSATS 2014, Genoa, Italy, July 28–29, 2014, Revised Selected Papers
ACCV 2016 International Workshops, Taipei, Taiwan, November 20-24, 2016, Revised Selected Papers, Part II
Fractional Calculus: Theory and Applications
Introduction to Data Science and Machine Learning
Access
Practical Algorithms for Image Analysis with CD-ROM
This book contains the research contributions presented at the 14th International Conference on Computing and Information Technology (IC2IT 2018) organised by King Mongkut's University of Technology North Bangkok and its partners, and held in the northern Thai city of Chiang Mai in July 2018. Traditionally, IC2IT 2018 provides a forum for exchange on the state of the art and on expected future developments in its field. Correspondingly, this book contains chapters on topics in data mining, machine learning, natural language processing, image processing, networks and security, software engineering and information technology. With them, the editors want to foster inspiring discussions among colleagues, not only during the conference. It is also intended to contribute to a deeper understanding of the underlying problems as needed to solve them in complex environments and, beneficial for this purpose, to encourage interdisciplinary cooperation.
Complex systems and their phenomena are ubiquitous as they can be found in biology, finance, the humanities, management sciences, medicine, physics and similar fields. For many problems in these fields, there are no conventional ways to mathematically or analytically solve them completely at low cost. On the other hand, nature already solved many optimization problems efficiently. Computational intelligence attempts to mimic nature-inspired problem-solving strategies and methods. These strategies can be used to study, model and analyze complex systems such that it becomes feasible to handle them. Key areas of computational intelligence are artificial neural networks, evolutionary computation and fuzzy systems. As only a few researchers in that field, Rudolf Kruse has contributed in many important ways to the understanding, modeling and application of computational intelligence methods. On occasion of his 60th birthday, a collection of original papers of leading researchers in the field of computational intelligence has been collected in this volume.
With the recent and enormous increase in the amount of available data sets of all kinds, applying effective and efficient techniques for analyzing and extracting information from that data has become a crucial task. Intelligent Data Analysis for Real-Life Applications: Theory and Practice investigates the application of Intelligent Data Analysis (IDA) to these data sets through the design and development of algorithms and techniques to extract knowledge from databases. This pivotal reference explores practical applications of IDA, and it is essential for academic and research libraries as well as students, researchers, and educators in data analysis, application development, and database management.
Data mining can be defined as the process of selection, exploration and modelling of large databases, in order to discover models and patterns. The increasing availability of data in the current information society has led to the need for valid tools for its modelling and analysis. Data mining and applied statistical methods are the appropriate tools to extract such knowledge from data. Applications occur in many different fields, including statistics, computer science, machine learning, economics, marketing and finance. This book is the first to describe applied data mining methods in a consistent statistical framework, and then show how they can be applied in practice. All the methods described are either computational, or of a statistical modelling nature. Complex probabilistic models and mathematical tools are not used, so the book is accessible to a wide audience of students and industry professionals. The second half of the book consists of nine case studies, taken from the author's own work in industry, that demonstrate how the methods described can be applied to real problems. Provides a solid introduction to applied data mining methods in a consistent statistical framework Includes coverage of classical, multivariate and Bayesian statistical methodology Includes many recent developments such as web mining, sequential Bayesian analysis and memory based reasoning Each statistical method described is illustrated with real life applications Features a number of detailed case studies based on applied projects within industry Incorporates discussion on software used in data mining, with particular emphasis on SAS Supported by a website featuring data sets, software and additional material Includes an extensive bibliography and pointers to further reading within the text Author has many years experience teaching introductory and multivariate statistics and data mining, and working on applied projects within industry A valuable resource for advanced undergraduate and graduate students of applied statistics, data mining, computer science and economics, as well as for professionals working in industry on projects involving large volumes of data – such as in marketing or financial risk management.
7th EAI International Conference, GreeNets 2020, Harbin, China, June 27–28, 2020, Proceedings
Intelligent Data Analysis for Real-Life Applications: Theory and Practice
Machine Learning Techniques for Adaptive Multimedia Retrieval: Technologies Applications and Perspectives
Advances on Smart and Soft Computing
UbiComp 2007: Ubiquitous Computing
Advances in Molecular Biophotonics
12th International Conference, ICCCI 2020, Da Nang, Vietnam, November 30 – December 3, 2020, Proceedings
This book is a printed edition of the Special Issue "Fractional Calculus: Theory and Applications" that was published in Mathematics
The two-volume set LNAI 9692 and LNAI 9693 constitutes the refereed proceedings of the 15th International Conference on Artificial Intelligence and Soft Computing, ICAISC 2016, held in Zakopane, Poland in June 2016. The 134 revised full papers presented were carefully reviewed and selected from 343 submissions. The papers included in the first volume are organized in the following topical sections: neural networks and their applications; fuzzy systems and their applications; evolutionary algorithms and their applications; agent systems, robotics and control; and pattern classification. The second volume is divided in the following parts:

bioinformatics, biometrics and medical applications; data mining; artificial intelligence in modeling and simulation; visual information coding meets machine learning; and various problems of artificial intelligence. Reducing the cost of space program interests people more and more nowadays due to the concerns of budget limitation and commercialization of space technology. The Proceedings of the 3rd International Symposium on Reducing the Cost of Spacecraft Ground Systems and Operations bring together papers contributed by the authors representing the research organizations, academic institutions and commercial sectors of 10 countries around the world. The papers encompass the subject areas in mission planning and operation, TT&C systems, mission control centers, and mini and small satellite support, highlighting the issues concerned by the researchers and engineers involved in a wide range of space programs and space industries.

"This book provides innovative research on information gathering, web data mining, and automation systems, addressing multidisciplinary applications and focusing on theories and methods with an enterprise-wide perspective"--Provided by publisher.

15th International Conference, ICAISC 2016, Zakopane, Poland, June 12-16, 2016, Proceedings, Part I
ICCID 2020

A Hands-On Guide for Programmers and Data Scientists

Advances in Interdisciplinary Applied Discrete Mathematics

Proceedings of the 14th International Conference on Computing and Information Technology (IC2IT 2018)

Computational Intelligence in Intelligent Data Analysis

Data Analysis with Open Source Tools

Being the most active field in modern physics, Optical Physics has developed many new branches and interdisciplinary fields overlapping with various classical disciplines. This series summarizes the advancements of optical physics in the past few decades. The fields: High Field Laser Physics, Precision Laser Spectroscopy, Nonlinear Optics, Nanophotonics, Quantum Optics, Ultrafast Optics, Condensed Matter Optics, and Molecular Biophotonics.

This book is a collection of high-quality research work on cutting-edge technologies and the most-happening areas of computational intelligence and data engineering. It includes selected papers from the International Conference on Computational Intelligence and Data Engineering (ICCID 2020). It covers various topics, including collective intelligence, intelligent transportation systems, fuzzy systems, Bayesian network, ant colony optimization, data privacy and security, data mining, data warehousing, big data, natural language processing, swarm intelligence and speech processing.

This book constitutes the refereed post-conference proceedings of the 6th International Conference on Personal Satellite Services, PSATS 2014, held in Genova, Italy, in July 2014. The 10 revised full papers presented were carefully reviewed by the members of the program committee and accepted for publication in the next generation satellite networking and communication systems.

State of the art CubeSats such as ExoplanetSat require pointing precision for the science payload on the order of arcseconds. ExoplanetSat uses dual stage control to achieve the pointing requirement. Reaction wheels provide coarse satellite attitude control and piezoelectric stage performs fine optical stabilization. The optical sensor provides star images from which a centroiding algorithm estimates the star locations on the optical focal plane. The star locations are used for both the coarse and fine determination. The centroiding algorithm requires a short processing time to maximize the bandwidth of the fine control loop. This thesis proposes a new fast centroiding algorithm based on centroid window tracking. The tracking algorithm uses multiple image frames to estimate the motion of the optical sensor. The estimated motion provides a prediction of the current centroid locations. An image window is centered at each predicted star location. A center of mass calculation is performed on the image window to determine the centroid location. This proposed algorithm is shown to reduce the computation time by a factor of 10 with a novel air bearing hardware testbed. This thesis also develops a high fidelity optical imager model in MATLAB Simulink. This model is used to simulate optical systems in a spacecraft pointing simulator. The model is validated with the air bearing testbed. Furthermore, the model is autotyped to C-code which is compatible with a rapid Monte Carlo analysis framework.

21-25 June, 2004, Glasgow, Scotland, United Kingdom

Foundations and Applications

Information Systems Design and Intelligent Applications

Information Retrieval Methods for Multidisciplinary Applications

Intelligent Multi-Modal Data Processing

Principles of Adaptive Optics

Proceedings of ICCAN 2017

Collecting data is relatively easy, but turning raw information into something useful requires that you know how to extract precisely what you need. With this insightful book, intermediate to experienced programmers interested in data analysis will learn techniques for working with data in a business environment. You'll learn how to look at data to discover what it contains, how to capture those ideas in conceptual models, and then feed your understanding back into the organization through business plans, metrics dashboards, and other applications. Along the way, you'll experiment with concepts through hands-on workshops at the end of each chapter. Above all, you'll learn how to think about the results you want to achieve -- rather than rely on tools to think for you. Use graphics to describe data with one, two, or dozens of variables

Develop conceptual models using back-of-the-envelope calculations, as well as scaling and probability arguments Mine data with computationally intensive methods such as simulation and clustering Make your conclusions understandable through reports, dashboards, and other metrics programs Understand financial calculations, including the time-value of money Use dimensionality reduction techniques or predictive analytics to conquer challenging data analysis situations Become familiar with different open source programming environments for data analysis "Finally, a concise reference for understanding how to conquer piles of data."--Austin King, Senior Web Developer, Mozilla "An indispensable text for aspiring data scientists."--Michael E. Driscoll, CEO/Founder, Dataspora

Fast Star Tracker Centroid Algorithm for High Performance CubeSat with Air Bearing Validation

Introduction to Data Science and Machine Learning has been created with the goal to provide beginners seeking to learn about data science, data enthusiasts, and experienced data professionals with a deep understanding of data science application development using open-source programming from start to finish. This book is divided into four sections: the first section contains an introduction to the book, the second covers the field of data science, software development, and open-source based embedded hardware; the third section covers algorithms that are the decision engines for data science applications; and the final section brings together the concepts shared in the first three sections and provides several examples of data science applications.

The book focuses to foster new and original research ideas and results in three broad areas: computing, analytics, and networking with its prospective applications in the various interdisciplinary domains of engineering. This is an exciting and emerging interdisciplinary area in which a wide range of theory and methodologies are being investigated and developed to tackle complex and challenging real world problems. It also provides insights into the International Conference on Computing Analytics and Networking (ICCAN 2017) which is a premier international open forum for scientists, researchers and technocrats in academia as well as in industries from different parts of the world to present, interact, and exchange the state of art of concepts, prototypes, innovative research ideas in several diversified fields. The book includes invited keynote papers and paper presentations from both academia and industry to initiate and ignite our young minds in the meadow of momentous research and thereby enrich their existing knowledge. The book aims at postgraduate students and researchers working in the discipline of Computer Science & Engineering. It will be also useful for the researchers working in the domain of electronics as it contains some hardware technologies and forthcoming communication technologies.

Proceedings of the 10th ICACCT, 2016

9th International Conference, UbiComp 2007, Innsbruck, Austria, September 16-19, 2007, Proceedings

Fast Star Tracker Centroid Algorithm for High Performance CubeSat with Air Bearing Validation

Concepts and Methods for a Librarian of the Web

Reducing the Cost of Spacecraft Ground Systems and Operations

Intelligent Information Processing X

Proceedings of ICSCSP 2018, Volume 1