Dynamic Fleet Management For International Truck Transportation Focusing On Occasional Transportatio

The availability of today’s online information systems rapidly increases the relevance of dynamic decision making within a large number of operational contexts. Whenever a sequence of interdependent decisions occurs, making a single decision raises the need for anticipation of its future impact on the entire decision process. Anticipatory support is needed for a broad variety of dynamic and stochastic decision problems from different operational contexts such as finance, energy management, manufacturing and transportation. Example problems include asset allocation, feed-in of electricity produced by wind power as well as scheduling and routing. All these problems entail a sequence of decisions contributing to an overall goal and taking place in the course of a certain period of time. Each of the decisions is derived by solution of an optimization problem. As a consequence a stochastic and dynamic decision problem resolves into a series of optimization problems to be formulated and solved by anticipation of the remaining decision process. However, actually solving a dynamic decision problem by means of approximate dynamic programming still is a major scientific challenge. Most of the work done so far is devoted to problems allowing for formulation of the underlying optimization problems as linear programs. Problem domains like scheduling and routing, where linear programming typically does not produce a significant benefit for problem solving, have not been considered so far. Therefore, the industry demand for dynamic scheduling and routing is still predominantly satisfied by purely heuristic approaches to anticipatory decision making. Although this may work well for certain dynamic decision problems, these approaches lack transferability of findings to other, related problems. This book has serves two major purposes: ? It provides a comprehensive and unique view of anticipatory optimization for dynamic decision making. It fully integrates Markov decision processes, dynamic programming, data mining and optimization and introduces a new perspective on approximate dynamic programming. Moreover, the book identifies different degrees of anticipation, enabling an assessment of specific approaches to dynamic decision making. ? It shows for the first time how to successfully solve a dynamic vehicle routing problem by approximate dynamic programming. It elaborates on every building block required for this kind of approach to dynamic vehicle routing. Thereby the book has a pioneering character and is intended to provide a footing for the dynamic vehicle routing community.

The volume comprises the proceedings of the second International Conference on Dynamics in Logistics LDIC 2009. The scope of the conference was concerned with the identification, analysis, and description of the dynamics of logistic processes and networks. The spectrum reached from the planning and modelling of processes over innovative methods like autonomous control and knowledge management to the new technologies provided by radio frequency identification, mobile communication, and networking. The growing dynamics confronts the area of logistics with completely new challenges: It must become possible to rapidly and flexibly adapt logistic processes and networks to continuously changing conditions. LDIC 2009 provided a forum for the discussion of advances in that matter. The volume consists of one invited paper and of 47 contributed papers divided into various subjects including mathematical modelling in transport and production logistics, routing in dynamic logistic networks, sustainable collaboration and supply chain control policies, information, communication, autonomy, adaption and cognition in logistics, radio frequency identification in logistics and manufacturing networks, applications in production logistics, and logistic solutions for ports, container terminals, regions and services.

This book provides a straightforward overview for every researcher interested in stochastic dynamic vehicle routing problems (SDVRPs). The

book is written for both the applied researcher looking for suitable solution approaches for particular problems as well as for the theoretical researcher looking for effective and efficient methods of stochastic dynamic optimization and approximate dynamic programming (ADP). To this end, the book contains two parts. In the first part, the general methodology required for modeling and approaching SDVRPs is presented. Itpresents adapted and new, general anticipatory methods of ADP tailored to the needs of dynamic vehicle routing. Since stochastic dynamic optimization is often complex and may not always be intuitive on first glance, the author accompanies the theoretical SDO-methodology with illustrative examples from the field of SDVRPs. The second part of this book then depicts the application of the theory to a specific SDVRP. The process starts from the real-world application. The author describes a SDVRP with stochastic customer requests often addressed in the literature, and then shows in detail how this problem can be modeled as a Markov decision process and presents several anticipatory solution approaches based on ADP. In an extensive computational study, he shows the advantages of the presented approaches compared to conventional heuristics. To allow deep insights in the functionality of ADP, he presents a comprehensive analysis of the ADP approaches. Dynamic Fleet Management for International Truck TransportationFocusing on Occasional Transportation TasksGabler Verlag

This book is an updated effort in summarizing the trending topics and new hot research lines in solving dynamic problems using metaheuristics. An analysis of the present state in solving complex problems quickly draws a clear picture: problems that change in time, having noise and uncertainties in their definition are becoming very important. The tools to face these problems are still to be built, since existing techniques are either slow or inefficient in tracking the many global optima that those problems are presenting to the solver technique. Thus, this book is devoted to include several of the most important advances in solving dynamic problems. Metaheuristics are the more popular tools to this end, and then we can find in the book how to best use genetic algorithms, particle swarm, ant colonies, immune systems, variable neighborhood search, and many other bioinspired techniques. Also, neural network solutions are considered in this book. Both, theory and practice have been addressed in the chapters of the book. Mathematical background and methodological tools in solving this new class of problems and applications are included. From the applications point of view, not just academic benchmarks are dealt with, but also real world applications in logistics and bioinformatics are discussed here. The book then covers theory and practice, as well as discrete versus continuous dynamic optimization, in the aim of creating a fresh and comprehensive volume. This book is targeted to either beginners and experienced practitioners in dynamic optimization, since we took care of devising the chapters in a way that a wide audience could profit from its contents. We hope to offer a single source for up-to-date information in dynamic optimization, an inspiring and attractive new research domain that appeared in these last years and is here to stay.

Logistics has become a strategic factor for development and competition. Terrorist attacks, such as 11th of September 2001 in the USA, have caused the introduction of rules and procedures, which affect the overall logistics showing the vulnerability of the global economy. This book presents the status of research on dangerous goods transport.

This edited volume addresses the importance of mathematics for industry and society by presenting highlights from contract research at the Department of Applied Mathematics at SINTEF, the largest independent research organization in Scandinavia. Examples range from computer-aided geometric design, via general purpose computing on graphics cards, to reservoir simulation for enhanced oil recovery. Contributions are written in a tutorial style.

TEODOR GABRIEL CRAINIC, DIRECTOR The Centre for Research on Transportation (C.R.T.) was founded in 1971 by the Universite de Montreal. From 1988 on, it is jointly managed by the Universite de Montreal and its affiliated schools, the Ecole des Hautes Etudes

Commerciales and Ecole Poly technique. Professors, students and researchers from many institutions in the Montreal area join forces at the C.R.T. to analyze transportation, logistics and telecommunication systems from a multidisciplinary perspective. The C.R.T. pursues three major, complementary objectives: training of high-level specialists; the advancement of knowledge and technology; the transfer of technology towards industry and the public sector. Its main field of expertise is the develop ment of quantitative and computer-based models and methods for the analysis of urban, regional and intercity transportation networks, as well as telecommunication systems. This applies to the study of passenger and commodity flows, as well as to the socioeconomic aspects of transportation: policy, regulation, economics. The twenty-fifth anniversary of the C.R.T. offered the opportunity to evaluate past accomplishments and to identify future trends and challenges. Five colloquia were thus organized on major research and application themes that also reflected our main research areas. They gathered together internationally renowned researchers who linked recent scientific and technological advances to modeling and methodological challenges waiting to be tackled, particularly concerning new problems and applica tions, and the increasingly widespread use of new technologies.

Vehicle routing problems, among the most studied in combinatorial optimization, arise in many practical contexts (freight distribution and collection, transportation, garbage collection, newspaper delivery, etc.). Operations researchers have made significant developments in the algorithms for their solution, and÷Vehicle Routing: Problems, Methods, and Applications, Second Edition÷reflects these advances. The text of the new edition is either completely new or significantly revised and provides extensive and complete state-of-the-art coverage of vehicle routing by those who have done most of the innovative research in the area; it emphasizes methodology related to specific classes of vehicle routing problems and, since vehicle routing is used as a benchmark for all new solution techniques, contains a complete overview of current solutions to combinatorial optimization problems. It also includes several chapters on important and emerging applications, such as disaster relief and green vehicle routing.÷

The three-volume set LNCS 12937 - 12939 constitutes the proceedings of the 16th International Conference on Wireless Algorithms, Systems, and Applications, WASA 2021, which was held during June 25-27, 2021. The conference took place in Nanjing, China. The 103 full and 57 short papers presented in these proceedings were carefully reviewed and selected from 315 submissions. The following topics are covered in Part I of the set: network protocols, signal processing, wireless telecommunication systems, blockchain, IoT and edge computing, artificial intelligence, computer security, distributed computer systems, machine learning, and others.

In today’s competitive markets, considering the demand and the supply chain sides is crucial to keeping revenue and customer satisfaction maximized. Managing and planning demand play a vital role in the sustainability of a company. This is the first book to the discuss managerial, mathematical, and conceptual framework of influencing factors on demand along with accurate mathematical analyses to evaluate and raise revenue. The book provides an understanding of the key elements that impact buyer demand. It presents the mathematical relationship between the influencing factors and the demand functions. It discusses the methods used for inspiring demand, how to measure demand dependency on components such as price, quality, and inventory,

and it helps management improve alignment between supply and demand by affecting the level and understanding of the role within supply chain management (SCM). This book is applicable for the professional as well as for academia. It can help those working in SCM, project management, production, inventory control, scheduling, engineering management, retail management, and operations management.

The 2012 International Symposium on Management Intelligent Systems is believed to be the first international forum to present and discuss original, rigorous and significant contributions on Artificial Intelligence-based (AI) solutions—with a strong, practical logic and, preferably, with empirical applications—developed to aid the management of organizations in multiple areas, activities, processes and problem-solving; i.e., what we propose to be named as Management Intelligent Systems (MiS). The three-day event aimed to bring together researchers interested in this promising interdisciplinary field who came from areas as varied as management, marketing, and business in general, computer science, artificial intelligence, statistics, etc. This volume presents the proceedings of these activities in a collection of contributions with many original approaches. They address diverse Management and Business areas of application such as decision support, segmentation of markets, CRM, product design, service personalization, organizational design, e-commerce, credit scoring, workplace integration, innovation management, business database analysis, workflow management, location of stores, etc. A wide variety of AI techniques have been applied to these areas such as multi-objective optimization and evolutionary algorithms, classification algorithms, ant algorithms, fuzzy rule-based systems, intelligent agents, Web mining, neural networks, Bayesian models, data warehousing, rough sets, etc. The symposium was organized by the Soft Computing and Intelligent Information Systems Research Group (http://sci2s.ugr.es) of the University of Granada (Spain) and the Bioinformatics, Intelligent System and Educational Technology Research Group (http://bisite.usal.es/) of the University of Salamanca (Spain). The present edition is held in Salamanca (Spain) on July 11-13, 2012.

Intelligent Transportation Systems (ITS) are the model for integrating advanced information technology, data communication transmission technology, electronic sensing technology, control technology and computer technology into a comprehensive ground traffic management system. They are the direction of development for future transportation systems. This book presents the proceedings of the 3rd International Conference on Information Technology and Intelligent Transportation Systems (ITITS 2018), held in Xi’an, China, on 15-16 September 2018. The conference provides a platform for professionals and researchers from industry and academia to present and discuss recent advances in the field of information technology and intelligent transportation systems. Intelligent transport systems vary in the technologies they apply, from basic management systems to more application-based systems. Information technology – including wireless communication, computational technologies, floating car data/floating cellular data, sensor technologies, and video vehicle detection – is also intrinsic to intelligent transportation systems. All papers were reviewed by 3-4 referees, and the program chairs of the conference committee made their selections based on the score of each paper. This year, ITITS 2018 received more than 168 papers from 4 countries, of which 41 papers were accepted. Offering a state-of-the-art overview of the theoretical and applied topics related to ITS, this book will be of interest to all those working in the

field.

This timely and comprehensive new Handbook brings together an unrivalled group of distinguished scholars and practitioners to provide in-depth analysis and a contemporary perspective on a wide-ranging array of topics in maritime economics. Inherently global in nature, the economics of the maritime sector has proved pivotal in facilitating globalization and international trade. This Handbook offers a unique and indispensable source of reference and information for researchers, students and practitioners interested in the relationship between these developments and maritime markets.

Logistics providers typically own large fleets of transportation vehicles such as rail cars or trucks. These fleets do not only determine to a large extent the service level the company can offer, but also make up a large part of total costs. Proper management of the fleet is therefore a crucial factor for these companies. In this book the author presents planning approaches that address the optimal management of vehicle fleets. Firstly, methods for determining the mixture of vehicle types and the optimal size of a fleet are developed. Secondly, approaches for supporting new service models such as customer segmentation are derived. Potential readership includes scholars and graduate students who are interested in the field of fleet planning and practitioners from logistics companies looking for new planning approaches.

The 11th International Symposium on Distributed Computing and Artificial Intelligence 2014 (DCAI 2014) is a forum to present applications of innovative techniques for studying and solving complex problems. The exchange of ideas between scientists and technicians from both the academic and industrial sector is essential to facilitate the development of systems that can meet the ever-increasing demands of today’s society. The present edition brings together past experience, current work and promising future trends associated with distributed computing, artificial intelligence and their application in order to provide efficient solutions to real problems. This year’s technical program presents both high quality and diversity, with contributions in well-established and evolving areas of research (Algeria, Brazil, China, Croatia, Czech Republic, Denmark, France, Germany, Ireland, Italy, Japan, Malaysia, Mexico, Poland, Portugal, Republic of Korea, Spain, Taiwan, Tunisia, Ukraine, United Kingdom), representing a truly “wide area network” of research activity. DCAI'14 Special Sessions have been a very useful tool in order to complement the regular program with new or emerging topics of particular interest to the participating community. Special Sessions that emphasize on multi-disciplinary and transversal aspects, such as AI-driven methods for Multimodal Networks and Processes Modeling and Multi-Agents Macroeconomics have been especially encouraged and welcome. This symposium is organized by the Bioinformatics, Intelligent System and Educational Technology Research Group (http://bisite.usal.es/) of the University of Salamanca. The present edition was held in Salamanca, Spain, from 4th to 6th June 2014.

The ten-volume set LNCS 12949 – 12958 constitutes the proceedings of the 21st International Conference on Computational Science and Its Applications, ICCSA 2021, which was held in Cagliari, Italy, during September 13 – 16, 2021. The event was organized in a hybrid mode due to the Covid-19 pandemic.The 466 full and 18 short papers presented in these proceedings were carefully reviewed and selected from 1588 submissions. The books cover such topics as multicore architectures, computational astrochemistry, mobile and wireless security, sensor

networks, open source software, collaborative and social computing systems and tools, computational geometry, applied mathematics human computer interaction, software design engineering, and others. Part V of the set includes the the proceedings on the following workshops: International Workshop on Computational Geometry and Applications (CGA 2021); International Workshop on Collaborative Intelligence in Multimodal Applications (CIMA 2021); International Workshop on Computational Science and HPC (CSHPC 2021); International Workshop on Computational Optimization and Applications (COA 2021); International Workshop on Cities, Technologies and Planning (CTP 2021); International Workshop on Computational Astrochemistry (CompAstro 2021); International Workshop on Advanced Modeling E-Mobility in Urban Spaces (DEMOS 2021).The chapters "On Local Convergence of Stochastic Global Optimization Algorithms" and "Computing Binding Energies of Interstellar Molecules by Semiempirical Quantum Methods: Comparison between DFT and GFN2 on Crystalline Ice" are published open access under a CC BY license (Creative Commons Attribution 4.0 International License).

Optimization Models for Rail Car Fleet Management represents the result of multi-year efforts to provide readers with insights into one of the most important areas of railway transport management. The book covers mathematical procedures for the effective and efficient utilization of railway freight cars, developed models for optimization methods, heterogeneity and partial substitutability of freight cars, research and development in rail freight car fleet management models, and the stochastic and dynamic nature of the supply, demand and traveling time of freight cars, among other topics. Summarizes the authors past research efforts in the field of rail freight car fleet management Presents various approaches that include the application of a variety of optimization techniques Contains centralized, decentralized, distributed perspectives considered under the assumption of deterministic, stochastic, fuzzy and fuzzy stochastic parameters

Two new dynamic planning approaches, incorporating all important real-life restrictions, such as regulations on driving and working hours, are developed and evaluated. Extensive numerical tests are carried out with a five-week real-life data set from an international freight forwarding company.

Logistic problems can rarely be solved satisfyingly within one single scientific discipline. This cross-sectional character is taken into account by the Research Cluster for Dynamics in Logistics with a combination of economical, information and production technical and enterprise-oriented research approaches. In doing so, the interdisciplinary cooperation between university, research institutes and enterprises for the solution of logistic problems is encouraged. This book comprises the edited proceedings of the first International Conference on Dynamics in Logistics LDIC 2007. The scope of the conference was concerned with the identification, analysis, and description of the dynamics of logistic processes and networks. The spectrum reached from the planning and modelling of processes over innovative methods like autonomous control and knowledge management to the new technologies provided by radio frequency identification, mobile communication, and networking. Two invited papers and of 42 contributed papers on various subjects give an state-of-art overview on dynamics in logistics. They include routing in dynamic logistic networks, RFID in logistics and manufacturing networks, supply chain control policies, sustainable collaboration, knowledge management and service models in logistics, container logistics, autonomous control in logistics, and logistic process modelling.

This book constitutes the thoroughly refereed conference proceedings of the 5th International Conference on Computational Collective Intelligence, ICCCI 2013, held in Craiova, Romania, in September 2013. The 72 revised full papers presented were carefully selected from numerous submissions. Conference papers are organized in 16 technical sessions, covering the following topics: intelligent e-learning, classification and clustering methods, web intelligence and interaction, agents and multi-agent systems, social networks, intelligent

knowledge management, language processing systems, modeling and optimization techniques, evolutionary computation, intelligent and group decision making, swarm intelligence, data mining techniques and applications, cooperative problem solving, collective intelligence for text mining and innovation, collective intelligence for social understanding and mining, and soft methods in collective intelligence.

This book constitutes the refereed proceedings of the 8th InternationalConference on Computational Logistics, ICCL 2017, held in Southampton,UK, in October 2017.The 38 papers presented in this volume were carefully reviewed and selected for inclusion in the book. They are organized in topical sections entitled: vehicle routing and scheduling; maritime logistics;synchromodal transportation; and transportation, logistics and supply chain planning.

The main goal of this book is to provide a state of the art of hybrid metaheuristics. The book provides a complete background that enables readers to design and implement hybrid metaheuristics to solve complex optimization problems (continuous/discrete, mono-objective/multi-objective, optimization under uncertainty) in a diverse range of application domains. Readers learn to solve large scale problems quickly and efficiently combining metaheuristics with complementary metaheuristics, mathematical programming, constraint programming and machine learning. Numerous real-world examples of problems and solutions demonstrate how hybrid metaheuristics are applied in such fields as networks, logistics and transportation, bio-medical, engineering design, scheduling.

Container transportation is the predominant mode of inter-continental cargo traffic. Since container ships and port terminals involve a huge capital investment and significant daily operating costs, it is of crucial importance to efficiently utilize the internal resources of container terminals and transportation systems. Today there is an ongoing trend to use automated container handling and transportation technology, in particular, in countries with high labour costs. This in turn requires highly sophisticated control strategies in order to meet the desired performance measures. The primary objective of this book is to reflect these recent developments and to present new insights and successful solutions to operational problems of automated container terminals and transportation systems. It comprises reports on the state of the art, applications of quantitative methods, as well as case studies and simulation results. Its contributions are written by leading experts from academia and business. The book addresses practitioners as well as academic researchers in logistics, transportation, and management.

This book constitutes the revised selected papers from the 13 European Conference on Multi-Agent Systems, EUMAS 2015, and the Third International Conference on Agreement Technologies, AT 2015, held in Athens, Greece, in December 2015. The 36 papers presented in this volume were carefully reviewed and selected from 65 submissions. They are organized in topical sections named: coordination and planning; learning and optimization, argumentation and negotiation; norms, trust, and reputation; agent-based simulation and agent programming.

Businesses must create initiatives and adopt eco-friendly practices in order to adhere to the sustainability goals of a globalized world. Recycling, product service systems, and green manufacturing are just a few methods businesses use within a sustainable supply chain. However, these tools and techniques must also ensure business growth in order to remain relevant in an environmentally-conscious world. The Handbook of Research on Interdisciplinary Approaches to Decision Making for Sustainable Supply Chains provides interdisciplinary approaches to sustainable supply chain management through the optimization of system performance and development of new policies, design networks, and effective reverse logistics practices. Featuring research on topics such as industrial symbiosis, green collaboration, and clean transportation, this book is ideally designed for policymakers,

business executives, warehouse managers, operations managers, suppliers, industry professionals, sustainability developers, decision makers, students, academicians, practitioners, and researchers seeking current research on reducing the environmental impacts of businesses via sustainable supply chain planning.

Disaster management is a process or strategy that is implemented when any type of catastrophic event takes place. The process may be initiated when anything threatens to disrupt normal operations or puts the lives of human beings at risk. Governments on all levels as well as many businesses create some sort of disaster plan that make it possible to overcome the catastrophe and return to normal function as quickly as possible. Response to natural disasters (e.g., floods, earthquakes) or technological disaster (e.g., nuclear, chemical) is an extreme complex process that involves severe time pressure, various uncertainties, high non-linearity and many stakeholders. Disaster management often requires several autonomous agencies to collaboratively mitigate, prepare, respond, and recover from heterogeneous and dynamic sets of hazards to society. Almost all disasters involve high degrees of novelty to deal with most unexpected various uncertainties and dynamic time pressures. Existing studies and approaches within disaster management have mainly been focused on some specific type of disasters with certain agency oriented. There is a lack of a general framework to deal with similarities and synergies among different disasters by taking their specific features into account. This book provides with various decisions analysis theories and support tools in complex systems in general and in disaster management in particular. The book is also generated during a long-term preparation of a European project proposal among most leading experts in the areas related to the book title. Chapters are evaluated based on quality and originality in theory and methodology, application oriented, relevance to the title of the book.

This book deals with transportation processes denoted as the Real-time Distribution of Perishable Goods (RDOPG). The book presents three contributions that are made to the field of transportation. First, a model considering the minimization of customer inconvenience is formulated. Second, a pro-active real-time control approach is proposed. Stochastic knowledge is generated from past request information by a new forecasting approach and is used in the pro-active approach to guide vehicles to request-likely areas before real requests arrive there. Various computational results are presented to show that in many cases the pro-active approach is able to achieve significantly improved results. Moreover, a measure for determining the structural quality of request data sets is also proposed. The third contribution of this book is a method that is presented for considering driver inconvenience aspects which arise from vehicle en-route diversion activities. Specifically, this method makes it possible to restrict the number of performed vehicle en-route diversion activities.?

"This book explores the latest empirical research and best real-world practices for preventing, weathering, and recovering from disasters such as earthquakes or tsunamis to nuclear disasters and cyber terrorism"--Provided by publisher.

This book constitutes the proceedings of the 12th International Conference on Transport Systems Telematics, TST 2012, held in Katowice-Ustron, Poland, in October 2012. The 48 papers included in this volume were carefully reviewed and selected for inclusion in this book. Transport telematics are the systems using the information and communication technologies in the area of

infrastructure and of means of transport and its participants. An intelligent transport covers systems that allow, through the data transmission and analysis, to influence the behaviour of road users and the action of technical elements in means of transport or along the traffic route. Intelligent transport systems - in accordance with the European Directive - are used for the transport management informatisation. The research shows that the use of telematics can significantly increase the efficiency of the transport system, the road safety and the environmental protection. This book provides an overview of solutions being developed in the field of intelligent transportation systems, and includes theoretical and case studies in the countries of conference participants.

This book focuses on real time management of distribution systems, integrating the latest results in system design, algorithm development and system implementation to capture the state-of-the art research and application trends. The book important topics such as goods dispatching, couriers, rescue and repair services, taxi cab services, and more. The book includes real-life case studies that describe the solution to actual distribution problems by combining systemic and algorithmic approaches.

Intelligent Decision Technologies (IDT) seeks an interchange of research on intelligent systems and intelligent technologies which enhance or improve decision making in industry, government and academia. The focus is interdisciplinary in nature, and includes research on all aspects of intelligent decision technologies, from fundamental development to the applied system. This volume represents leading research from the Third KES International Symposium on Intelligent Decision Technologies (KES IDT'11), hosted and organized by the University of Piraeus, Greece, in conjunction with KES International. The symposium was concerned with theory, design, development, implementation, testing and evaluation of intelligent decision systems. Topics include decision making theory, intelligent agents, fuzzy logic, multi-agent systems, Bayesian networks, optimization, artificial neural networks, genetic algorithms, expert systems, decision support systems, geographic information systems, case-based reasoning, time series, knowledge management systems, rough sets, spatial decision analysis, and multi-criteria decision analysis. These technologies have the potential to revolutionize decision making in many areas of management, healthcare, international business, finance, accounting, marketing, military applications, ecommerce, network management, crisis response, building design, information retrieval, and disaster recovery for a better future. The symposium was concerned with theory, design, development, implementation, testing and evaluation of intelligent decision systems. Topics include decision making theory, intelligent agents, fuzzy logic, multi-agent systems, Bayesian networks, optimization, artificial neural networks, genetic algorithms, expert systems, decision support systems, geographic information systems, case-based reasoning, time series, knowledge management systems, rough sets, spatial decision analysis, and multi-criteria decision analysis. These technologies have the potential to revolutionize decision making in many areas of management, healthcare, international business, finance, accounting, marketing, military applications, ecommerce, network management, crisis response, building design, information retrieval, and disaster recovery for a better future.

"This book offers the latest research within the field of HAIS, surveying the broad topics and collecting case studies, future

directions, and cutting edge analyses, investigating biologically inspired algorithms such as ant colony optimization and particle swarm optimization"--

This volume of three books presents recent advances in modelling, planning and evaluating city logistics for sustainable and liveable cities based on the application of ICT (Information and Communication Technology) and ITS (Intelligent Transport Systems). It highlights modelling the behaviour of stakeholders who are involved in city logistics as well as planning and managing policy measures of city logistics including cooperative freight transport systems in public-private partnerships. Case studies of implementing and evaluating city logistics measures in terms of economic, social and environmental benefits from major cities around the world are also given.

From driverless cars to vehicular networks, recent technological advances are being employed to increase road safety and improve driver satisfaction. As with any newly developed technology, researchers must take care to address all concerns, limitations, and dangers before widespread public adoption. Intelligent Transportation and Planning: Breakthroughs in Research and Practice is an innovative reference source for the latest academic material on the applications, management, and planning of intelligent transportation systems. Highlighting a range of topics, such as automatic control, infrastructure systems, and system architecture, this publication is ideally designed for engineers, academics, professionals, and practitioners actively involved in the transportation planning sector.

This edited volume presents the proceedings of the 20th CIRP LCE Conference, which cover various areas in life cycle engineering such as life cycle design, end-of-life management, manufacturing processes, manufacturing systems, methods and tools for sustainability, social sustainability, supply chain management, remanufacturing, etc.

Developments in Maritime Transportation and Exploitation of Sea Resources covers recent developments in maritime transportation and exploitation of sea resources, encompassing ocean and coastal areas. The book brings together a selection of papers reflecting fundamental areas of recent research and development in the fields of:- Ship Hydrodynamics-