Harbour Engineering Lecture Notes

This volume examines port economics, port navigation safety, and harbor hydraulics. It supplies you with descriptions of new findings in breakwater engineering, modeling techniques, marine structures and foundations, and terminal construction.

The second volume of the book series highlights works presented at the 2nd International Conference on Real Time Intelligent Systems, held in Casablanca on October 18-20, 2017?. The book offers a comprehensive, practical review of the state-of-the-art in designing and implementing real-time intelligent computing for the areas within the conference's scope such as robotics, intelligent alert systems, IoT, remote access control, multi-agent systems, networking, mobile smart systems, crowdsourcing, broadband systems, cloud computing, streaming data and many other applications. Research in real-time computing supports decision making in dynamic environments. Some examples include ABS, FBW flight control, automatic air-conditioning, etc. Intelligent computing relies heavily on artificial intelligence (AI) to make computers act for humans. The authors are confident that the solutions discussed in this book will provide a unique source of information and inspiration for researchers working in AI, distributed coding algorithms or smart services and platforms, and for IT professionals, who can integrate the proposed methods into their practice.

This book is based on the author's 49 years of experience as a practicing coastal engineer and 34 years as professor of coastal engineering and management at Queen's University. The book is therefore thoroughly practical in nature, but it also reflects newly relevant issues, such as consequences of failure, impacts of rising sea levels, aging infrastructure, real estate development, and contemporary decision making, design and education.This textbook is useful for undergraduate students, postgraduate students and practicing engineers. It covers waves, structures, sediment movement, coastal management, and contemporary coastal design and decision making. It presents both basic principles and engineering solutions. It discusses the traditional methods of analysis and synthesis (design), but also contemporary design methodologies, such as working with environmental impacts.The second edition expanded greatly on the topics of failure and resilience that surfaced as a result of recent disasters from hurricane surges and tsunamis. It updated the discussion of design and decision making for the 21st century, with many new examples.This third edition develops some of these topics further, but its largest new changes is the chapter on climate change. This chapter presents the basics of climate change and then goes on to stress the practical implications of the impacts of climate change, focusing on what is of importance to coastal and fluvial specialists.

These proceedings collect selected papers from the 7th International Conference on Green Intelligent Transportation System and Safety held in Nanjing on July 1-4, 2016. The selected works, which include state-of-the-art studies, are intended to promote the development of green mobility and intelligent transportation technology to achieve interconnectivity, resource sharing, flexibility and higher efficiency. They offer valuable insights for researchers and engineers in the fields of Transportation Technology and Traffic Engineering, Automotive and Mechanical Engineering, Industrial and System Engineering, and Electrical Engineering.

This book presents selected articles from the 5th International Conference on Geotechnics, Civil Engineering Works and Structures, held in Ha Noi, focusing on the theme "Innovation for Sustainable Infrastructure", aiming to not only raise awareness of the vital importance of sustainability in infrastructure development but to also highlight the essential roles of innovation and technology in planning and building sustainable infrastructure. It provides an international platform for researchers, practitioners, policymakers and entrepreneurs to present their recent advances and to exchange knowledge and experience on various topics related to the theme of "Innovation for Sustainable Infrastructure".

This is the Golden Age for Artificial Intelligence. The world is becoming increasingly automated and wired together. This also increases the opportunities for AI to help people and commerce. Almost every sub field of AI had now been used in substantial applications. Some of the fields highlighted in this publication are: CBR Technology; Model Based Systems; Data Mining and Natural Language Techniques. Not only does this publication show the activities, capabilities and accomplishments of the sub fields, it also focuses on what is happening across the field as a whole.

In the face of the enormous destruction caused by the December 26, 2004 Indian Ocean tsunami event, it is necessary to utilize more effective means of tsunami mitigation to prevent such tragedies. Based on the experiences gathered in storm wave damping by using submerged structures, Agnieszka Strusinska examines the applicability of artificial reefs as an integrated part of a multi-defence line strategy for tsunami attenuation. In her study, she first discusses the results of laboratory experiments in order to identify the difference in the nonlinear interaction of storm and tsunami-like solitary waves with an impermeable sub¬mer¬ged structure of a finite width (including generation of wave breaking and wave fission). With this basic knowledge, the damping performance of an artificial reef under tsunami impact is determined as a ratio of wave transmission, wave reflection, and wave energy dissipation for varying reef geometries and incident wave conditions using a Boussinesq-type numerical model.

Enabling Technologies for the Internet of Things: Wireless Circuits, Systems and Networks collects slides and notes from the lectures given in the 2017 Seasonal School Enabling Technologies for the Internet-of-Things, supported by IEEE CAS Society and by INTEL funding, and organized by Prof. Sergio Saponara, and Prof. Giuliano Manara. The book discusses new trends in Internet-of-Things (IoT) technologies, considering technological and training aspects, with special focus on electronic and electromagnetic circuits and systems. IoT involves research and design activities both in analog and in digital circuit/signal domains, including focus on sensors interfacing and conditioning, energy harvesting, low-power signal processing, wireless connectivity and networking, functional safety (FuSa). FuSa is one of the emerging key issues in IoT applications in safety critical domain like industry 4.0, autonomous and connected vehicles and e-health. Our world is becoming more and more interconnected. Currently it is estimated that two hundred billion smart

objects will be part of the IoT by 2020. This new scenario will pave the way to innovative business models and will bring new experiences in everyday life. The challenge is offering products, services and comprehensive solutions for the IoT, from technology to intelligent and connected objects and devices to connectivity and data centers, enhancing smart home, smart factory, autonomous driving cars and much more, while at the same time ensuring the highest safety standards. In safety-critical contexts, where a fault could jeopardize the human life, safety becomes a key aspect.

This book comprises the proceedings of the Fifth International Conference in Ocean Engineering (ICOE2019) focusing on emerging opportunities and challenges in the field of ocean engineering and offshore structures. Some of the themes covered in this volume are offshore structures and deepwater technology, ocean optics & acoustics, ocean renewable energy, marine spatial planning, climate change impacts & disaster risk reduction, etc. The essays are written by leading international experts, making it a valuable resource for researchers and practicing engineers alike.

These proceedings gather selected papers from the 9th International Conference on Green Intelligent Transportation Systems and Safety, held in Guilin, China on July 1-3, 2018. They feature cutting-edge studies on Green Intelligent Mobility Systems, the guiding motto being to achieve "green, intelligent, and safe transportation systems." The contributions presented here can help promote the development of green mobility and intelligent transportation technologies to improve interconnectivity, resource sharing, flexibility and efficiency. Given its scope, the book will benefit researchers and engineers in the fields of Transportation Technology and Traffic Engineering, Automotive and Mechanical Engineering, Industrial and System Engineering, and Electrical Engineering alike.

Accompanying CD-ROM in pocket at the back of book

Mechanistic models are often employed to simulate processes in coastal environments. However, these predictive tools are highly specialized, involve certain assumptions and limitations, and can be manipulated only by experienced engineers who have a thorough understanding of the underlying principles. This results in significant constraints on thei

This volume concerns the history of the Australian port of Fremantle, located on the edge of Western Australia and the Indian Ocean, throughout the hundred years of frequent changes to its structure and function between 1897 and 1997. Tull's aim is to use Fremantle as a prime example of the complex network of a Port, as a community and a place of vast and varied maritime business endeavours. He seeks to erase the perception of ports as 'passive links in the international transport chain' in order to draw ports to the attention and further research of maritime historians. The chapters are arranged thematically rather than chronologically, and includes statistical appendices, a bibliography, and an index, for ease of navigation.

Contributed articles.

This book constitutes the refereed proceedings of the 18th International Conference on Advanced Information Systems Engineering, CAiSE 2006, held in Luxembourg, in June 2006. The book presents 33 revised full papers together with 3 keynote talks. The papers are organized in topical sections on security, conceptual modeling, queries, document conceptualization, service composition, workflow, business modeling, configuration and separation, business process modeling, agent orientation, and requirements management.

A Community Enterprise: The History of the Port of Freemantle, 1897 to 1997Oxford University Press

Breakwaters and closure dams belong to the most spectacular hydraulic structures. They are exposed to the most severe loading by waves and currents, either during their construction, or during their life cycle. Design and construction of these structures are so vitally interrelated that a proper understanding requires a thorough knowledge of the th

This book contains the proceedings of the 3rd International Conference on Sustainability in Civil Engineering, ICSCE 2020, held on 26-27 November 2020, in Hanoi, Vietnam. It presents the expertise of scientists and engineers in academia and industry in the field of bridge and highway engineering, construction materials, environmental engineering, engineering in industry 4.0, geotechnical engineering, structural damage detection and health monitoring, structural engineering, geographic information system engineering, traffic, transportation and logistics engineering, water resources, estuary and coastal engineering.

This book offers a timely review of wave energy and its conversion mechanisms. Written having in mind current needs of advanced undergraduates engineering students, it covers the whole process of energy generation, from waves to electricity, in a systematic and comprehensive manner. Upon a general introduction to the field of wave energy, it presents analytical calculation methods for estimating wave energy potential in any given location. Further, it covers power-take off (PTOs), describing their mechanical and electrical aspects in detail, and control systems and algorithms. The book includes chapters written by active researchers with vast experience in their respective filed of specialization. It combines basic aspects with cutting-edge research and methods, and selected case studies. The book offers systematic and practice-oriented knowledge to students, researchers, and professionals in the wave energy sector. Chapters 17 of this book is available open access under a CC BY 4.0 license at link.springer.com.

This book comprises selected proceedings of the Fourth International Conference in Ocean Engineering (ICOE2018), focusing on emerging opportunities and challenges in the field of ocean engineering and offshore structures. It includes state-of-the-art content from leading international experts, making it a valuable resource for researchers and practicing engineers alike.

This WWII history chronicles the remarkable engineering achievement that kept vital supplies flowing to Allied forces after D-Day. In the planning stages of the Normandy invasion, Allied strategists correctly anticipated that the Germans would deny, either by destruction or dogged defense, the vital Channel ports in the aftermath of D-Day. If the invading armies could not be kept resupplied, Operation Overlord would fail. The only solution was to design, build, transport and install two massive artificial harbors. Code Name Mulberry tells the story of this highly ambitious scheme from the initial planning stage to its successful execution on the field of battle. Told in clear, accessible prose, the historical narrative is amply supported with photographs, diagrams and tables, which vividly demonstrate the scale of this great venture.

This book highlights recent findings in industrial, manufacturing and mechanical engineering, and provides an overview of the state of the art in these fields, mainly in Russia and Eastern Europe. A broad range of topics and issues in modern engineering are discussed, including the dynamics of machines and working processes, friction, wear and lubrication in machines, surface transport and technological machines,

manufacturing engineering of industrial facilities, materials engineering, metallurgy, control systems and their industrial applications, industrial mechatronics, automation and robotics. The book gathers selected papers presented at the 6th International Conference on Industrial Engineering (ICIE), held in Sochi, Russia in May 2020. The authors are experts in various fields of engineering, and all papers have been carefully reviewed. Given its scope, the book will be of interest to a wide readership, including mechanical and production engineers, lecturers in engineering disciplines, and engineering graduates.

The book is organized into two parts: the first part covers (i) the precious lessons obtained from recent actual tsunami disasters including the 2004 Indian Ocean Tsunami and 2011 Great East Japan Earthquake Disaster, (ii) fundamental knowledge of tsunami for our survival, and (iii) concludes the lessons learnt and listing measures for tsunami disaster mitigation for saving human lives. The second part presents tsunami from academic perspective in two chapters: one describes tsunami occurrence mechanism and near-shore behavior; the other mentions numerical simulation and forecasting of tsunami. Contents: How Can We Escape a Tsunami?: Examples of Tsunami Disasters Tsunami Disaster Knowledge for Tsunami Survival Prevention and Mitigation of Tsunami Disasters Tsunami Behavior and Forecasting: Occurrence and Amplification of Tsunamis Tsunami Simulations and Forecasting Systems Readership: Undergraduates and graduates interested in tsunamis, tsunami mitigation planners, oceanographers and physicists, especially residents in tsunami prone areas. Keywords: Tsunami;Disaster;Mitigation;Hardware;Software;Hazard MapReview: Key Features: The book aims to provide scientific information and knowledge for survival from tsunami to people who live or may possibly live in the areas prone to tsunami, or travelers who may visit such areas All these chapters are described from the viewpoint of saving human lives through lessons learnt and measures for tsunami disaster mitigation Written by world renowned experts on tsunami

This book presents papers from the International Conference on Sustainable Civil Engineering and Architecture 2019, which was held in Ho Chi Minh City, Vietnam, from 24–26 October 2019. The conference brought together international experts from both academia and industry to share their knowledge and experiences, and to facilitate collaboration and improve cooperation in the field. The book highlights the latest advances in sustainable architecture and civil engineering, covering topics such as offshore structures, structural engineering, construction materials, and architecture.

This book highlights the latest advancements in the use of automated systems in the design, construction, operation and future of the built environment and its occupants. It considers how the use of automated decision-making frameworks, artificial intelligence and other technologies of automation are presently impacting the practice of architects, engineers, project managers and contractors, and articulates the near future changes to workflows, legal frameworks and the wider AEC industry. This book surveys and compiles the use of city apps, robots that operate buildings and fabricate structural elements, 3D printing, drones, sensors, algorithms, and advanced prefabricated modules. The book also contributes to the growing literature on smart cities, and explores the impacts on data privacy and data sovereignty that arise through the use of sensors, digital twins and intelligent transport systems. It provides a useful reference for further research and development in the area of automation in design and construction to architects, engineers, project managers, superintendents and construction lawyers, contractors, policy makers, and students.