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Advances in Engineering Materials, Structures and Systems: Innovations, Mechanics and Applications comprises 411 papers that were presented at SEMC 2019, the Seventh International Conference on Structural Engineering, Mechanics and Computation, held in Cape Town, South Africa, from 2 to 4 September 2019. The subject matter reflects the broad scope of SEMC conferences, and covers a wide variety of engineering materials (both traditional and innovative) and many types

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of structures. The many topics featured in these Proceedings can be classified into six broad categories that deal with: (i) the mechanics of materials and fluids (elasticity, plasticity, flow through porous media, fluid dynamics, fracture, fatigue, damage, delamination, corrosion, bond, creep, shrinkage, etc); (ii) the mechanics of structures and systems (structural dynamics, vibration, seismic response, soil-structure interaction, fluid-structure interaction, response to blast and impact, response to fire, structural stability, buckling, collapse behaviour); (iii) the numerical modelling and experimental testing of materials and structures (numerical methods, simulation techniques,

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multi-scale modelling, computational modelling, laboratory testing, field testing, experimental measurements); (iv) innovations and special structures (nanostructures, adaptive structures, smart structures, composite structures, bio-inspired structures, shell structures, membranes, space structures, lightweight structures, long-span structures, tall buildings, wind turbines, etc); (v) design in traditional engineering materials (steel, concrete, steel-concrete composite, aluminium, masonry, timber, glass); (vi) the process of structural engineering (conceptualisation, planning, analysis, design, optimization, construction, assembly,

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manufacture, testing, maintenance, monitoring, assessment, repair, strengthening, retrofitting, decommissioning). The SEMC 2019 Proceedings will be of interest to civil, structural, mechanical, marine and aerospace engineers. Researchers, developers, practitioners and academics in these disciplines will find them useful. Two versions of the papers are available. Short versions, intended to be concise but self-contained summaries of the full papers, are in this printed book. The full versions of the papers are in the e-book.

This book presents recent developments in the areas of engineering and technology, focusing on experimental,

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numerical, and theoretical approaches. In the first part, the emphasis is on the emerging area of electromobility and its sub-disciplines, e.g. battery development, improved efficiency due to new designs and materials, and intelligent control approaches. In turn, the book's second part addresses the broader topic of energy conversion and generation based on classical (petrol engines) and more modern approaches (e.g. turbines). The third and last part addresses quality control and boosting engineering efficiency in a broader sense. Topics covered include e.g. modern contactless screening methods and related image processing.

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This book constitutes the refereed proceedings of the 10th International Conference on Social Robotics, ICSR 2018, held in Qingdao, China, in November 2018. The 60 full papers presented were carefully reviewed and selected from 79 submissions. The theme of the 2018 conference is: Social Robotics and AI. In addition to the technical sessions, ICSR 2018 included 2 workshops: Smart Sensing Systems: Towards Safe Navigation and Social Human-Robot Interaction of Service Robots.

Cases on 3D Technology Application and Integration in Education highlights the use of 3D technologies in the educational environment and the future prospects of

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adaption and evolution beyond the traditional methods of teaching. This comprehensive collection of research aims to provide instructors and researchers with a solid foundation of information on 3D technology.

Perceptual Fidelity in the Design of Virtual Environments  
Proceedings of the AHFE 2016 International Conference  
on Human Factors in Transportation, July 27-31, 2016,  
Walt Disney World®, Florida, USA

Augmented Reality, Virtual Reality, and Computer  
Graphics

Advances in Human Aspects of Transportation  
Ragusa SHWA 2021

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Advances in Simulation and Digital Human Modeling  
8th International Conference, AVR 2021, Virtual Event,  
September 7–10, 2021, Proceedings

This proceedings volume gathers outstanding papers submitted to the 2016 SAE-China Congress, the majority of which are from China, the biggest car maker as well as most dynamic car market in the world. The book includes insights into the current challenges that the whole industry is currently facing, and it offers possible solutions to problems such as emission controls, environmental pollution, the energy shortage, traffic congestion and sustainable development. It also presents the latest technical achievements in the automotive industry. Many of the approaches it presents can help technicians to solve the practical problems that most affect their daily work.

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This book focuses on the application of virtual reality (VR) technology in mining machinery. It gives a detailed introduction to the application of VR technology in virtual assembly, virtual planning, and virtual monitoring. Based on the theory of digital twin, VR technology and collaborative control technology are applied to coal mining machinery equipment, which lays a foundation for the digitalization and intellectualization of coal machinery equipment and broadens the application scope of virtual reality technology in the mechanical engineering field. Through the application of VR technology in coal machinery equipment, this book provides new methods and ideas for teaching activities, scientific research activities, and actual production with rich illustrations, related table introduction, unique research ideas, and other unique contents. This book could be a useful reference for researchers in mining

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machinery, simulation and modeling, computer-aided engineering (CAD and CAE) and design, visualization, mechanical engineering, and other disciplines.

Despite a growing body of research and targeted remediation, teenage and novice drivers continue to be six to nine times more likely to die in a crash than they are when they are just a few years older. The World Health Organization reports that road traffic injuries are the leading cause of death globally among 15 to 19 year olds. In light of these crash statistics, understanding the teen driver problem remains of paramount public health importance around the world. *The Handbook of Teen and Novice Drivers: Research, Practice, Policy, and Directions* provides critical knowledge for a broad range of potential readers, including students, teachers, researchers in academics, industry and the federal government,

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public policy makers at all levels, insurance companies and automobile manufacturers, driving instructors, and parents and their teens.

This Transportation Research Record contains 22 papers on human performance or simulation and visualization. Among the topics discussed are the following: crash involvement of young novice drivers; factors affecting the safety of young and older drivers; behavioral classification of passing maneuvers; in-vehicle text messages; measuring performance for the Federal Aviation Administration's safety oversight system; driver eye glance behavior during lane change decision, lane changes, and straight-ahead driving; driver fatigue, distraction, and performance; eye glance behavior during in-vehicle secondary tasks; multifunction interfaces in vehicles; interface workload of in-vehicle information systems;

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human-machine interface design for intelligent speed adaptation; an automated real-time driver warning system; fuzzy sets for evaluating driver perception of variable message signs; video advertising signs and traffic safety; message display formats of portable variable message signs; in-vehicle Global Positioning System data for evaluating deceleration at stop sign-controlled intersections; simulator evaluations of driving with vision impairments and visual aids; a driving simulator for work zone design; the application of visualization to transportation systems; a four-dimensional interactive visualization system for transportation management and traveler information; and virtual reality visualization of microscopic traffic simulations.

Trends in Neuroergonomics: A Comprehensive Overview  
Neuroergonomics

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Comprehensive Healthcare Simulation: Surgery and Surgical Subspecialties

Second International Conference, ICVR 2007, Held as Part of HCI International 2007, Beijing, China, July 22-27, 2007, Proceedings

Advances in Applied Digital Human Modeling and Simulation

Advances in Engineering Materials, Structures and Systems:

Innovations, Mechanics and Applications

Virtual Reality

***Effective use of driving simulators requires considerable technical and methodological skill along with considerable background knowledge. Acquiring the requisite knowledge and skills can be extraordinarily***

***time consuming, yet there has been no single convenient and comprehensive source of information on the driving simulation research being conducted around the world. A how-to-do-it resource for researchers and professionals, Handbook of Driving Simulation for Engineering, Medicine, and Psychology brings together discussions of technical issues in driving simulation with broad areas in which driving simulation is now playing a role. The chapters explore technical considerations, methodological issues, special and impaired populations,***

***evaluation of in-vehicle and nomadic devices, and infrastructure evaluations. It examines hardware and software selection, visual database and scenario development, independent subject variables and dependent vehicle, environmental, and psychological variables, statistical and biostatistical analysis, different types of drivers, existing and future key-in vehicle devises, and validation of research. A compilation of the research from more than 100 of the world's top thinkers and practitioners, the book covers basic and***

***advanced technical topics and provides a comprehensive review of the issues related to driving simulation. It describes literally hundreds of different simulation scenarios, provides color photographs of those scenarios, and makes available select videos of the scenarios on an accompanying web site, all of which should prove essential for seasoned researchers and for individuals new to driving simulation.***

***Fatigue and Driving Driver Impairment,  
Driver Fatigue, And Driving  
Simulation Routledge***

***This pragmatic book is a guide for the use of simulation in surgery and surgical subspecialties, including general surgery, urology, gynecology, cardiothoracic and vascular surgery, orthopedics, ophthalmology, and otolaryngology. It offers evidence-based recommendations for the application of simulation in surgery and addresses procedural skills training, clinical decision-making and team training, and discusses the future of surgical simulation. Readers are introduced to the different simulation modalities and technologies used***

***in surgery with a variety of learners including students, residents, practicing surgeons, and other health-related professionals.***

***This book discusses the latest advances in the research and development, design, operation, and analysis of transportation systems, including road, rail, aviation, aerospace and maritime as well as their supporting systems and infrastructure.***

***Focusing specifically on the contributions made by human factors and ergonomics, it analyses a wealth of topics, methods and***

***technologies associated to accident analysis, automated and autonomous vehicles, assessment of comfort and distraction of drivers, and environmental concerns, giving emphasis to intelligent transport systems and driver-assistance systems, among other topics. Based on contributions to the AHFE 2021 Conference on Human Aspects of Transportation, held virtually on July 25-29, 2021, from USA, this book offers extensive information on the latest human factors and ergonomics thinking and practice in the area of transportation, and a thought-***

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***provoking guide to researchers, graduate  
students and professionals in this field.***

***Simulation and Visualization***

***Technical Literature Abstracts***

***Proceedings of the 2013 International  
Conference on Advances in Construction  
Machinery and Vehicle Engineering***

***Human Performance***

***Road Traffic Safety***

***Proceedings of China SAE Congress 2019:  
Selected Papers***

***10th International Conference, ICSR 2018,  
Qingdao, China, November 28 - 30, 2018,***

## **Proceedings**

*This book constitutes the refereed proceedings of the Second International Conference on Virtual Reality, ICVR 2007, held in Beijing, China. It covers 3D rendering and visualization, interacting and navigating in virtual and augmented environments, industrial applications of virtual reality, as well as health, cultural, educational and entertainment applications.*

*This thesis introduces a new integrated algorithm for the detection of lane-level irregular driving. To date, there has been very little improvement in the ability to detect lane level irregular driving styles, mainly due to a lack of high performance positioning techniques and suitable driving*

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*pattern recognition algorithms. The algorithm combines data from the Global Positioning System (GPS), Inertial Measurement Unit (IMU) and lane information using advanced filtering methods. The vehicle state within a lane is estimated using a Particle Filter (PF) and an Extended Kalman Filter (EKF). The state information is then used within a novel Fuzzy Inference System (FIS) based algorithm to detect different types of irregular driving. Simulation and field trial results are used to demonstrate the accuracy and reliability of the proposed irregular driving detection method. The interactive computer-generated world of virtual reality has been successful in treating phobias and other anxiety-related conditions, in part because of its distinct advantages*

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*over traditional in vivo exposure. Yet many clinicians still think of VR technology as it was in the 1990s—bulky, costly, technically difficult—with little knowledge of its evolution toward more modern, evidence-based, practice-friendly treatment. These updates, and their clinical usefulness, are the subject of *Advances in Virtual Reality and Anxiety Disorders*, a timely guidebook geared toward integrating up-to-date VR methods into everyday practice. Introductory material covers key virtual reality concepts, provides a brief history of VR as used in therapy for anxiety disorders, addresses the concept of presence, and explains the side effects, known as cybersickness, that affect a small percentage of clients. Chapters in the book's main section*

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*detail current techniques and review study findings for using VR in the treatment of: · Claustrophobia. · Panic disorder, agoraphobia, and driving phobia. · Acrophobia and aviophobia. · Arachnophobia. · Social phobia. · Generalized anxiety disorder and OCD. · PTSD. · Plus clinical guidelines for establishing a VR clinic. An in-depth framework for effective (and cost-effective) therapeutic innovations for entrenched problems, Advances in Virtual Reality and Anxiety Disorders will find an engaged audience among psychologists, psychiatrists, social workers, and mental health counselors. eractive*

*These proceedings gather outstanding papers presented at the China SAE Congress 2019. Featuring contributions mainly*

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*from China, the biggest carmaker as well as most dynamic car market in the world, the book covers a wide range of automotive topics and the latest technical advances in the industry. Many of the approaches included can help technicians to solve practical problems that affect their daily work. In addition, the book offers valuable technical support to engineers, researchers and postgraduate students in the field of automotive engineering.*

*Getting Rid of Cybersickness*

*The Brain at Work*

*Proceedings of the AHFE 2016 International Conference on Digital Human Modeling and Simulation, July 27-31, 2016, Walt Disney World®, Florida, USA*

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***Infrastructure and Safety in a Collaborative World***

***Progress in Engineering Technology***

***5th International Conference, AC 2013, Held as Part of HCI International 2013, Las Vegas, NV, USA, July 21-26, 2013, Proceedings***

***Modeling and Simulation in Engineering***

This Research Topic is dedicated to Raja Parasuraman who unexpectedly passed on March 22nd 2015. Raja Parasuraman's pioneering work led the emergence of Neuroergonomics as a new scientific field. He combined his research interests in the field of Neuroergonomics which he defined as the study of the human brain in relation to performance at work

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and everyday settings. Raja Parasuraman was a pioneer, a truly exceptional researcher and an extraordinary person. He made significant contributions to a number of disciplines, from human factors to cognitive neuroscience. His advice to young researchers was to be passionate in order to develop theory and knowledge that can guide the design of technologies and environments for people. His legacy, the field of Neuroergonomics, will live on in countless faculties and students whom he advised and inspired with unmatched humility throughout the whole of his distinguished career. Raja Parasuraman was an impressive human being, a very kind person, and an absolutely inspiring individual who will be

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remembered by everyone who had the chance to meet him. About this Research Topic Since the advent of neuroergonomics, significant progress has been made with respect to methodology and tools for the investigation of the brain and behavior at work. This is especially the case for neuroscientific methods where the availability of ambulatory hardware, wearable sensors and advanced data analyses allow for imaging of brain dynamics in humans in applied environments. Methods such as: electroencephalography (EEG), functional near-infrared spectroscopy (fNIRS), and stimulation approaches like transcranial direct-current stimulation (tDCS) have made significant progress in

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both recording and altering brain activity while allowing full body movements outside laboratory environments. For neuroergonomics, the application of brain imaging in real-world scenarios is highly relevant. Traditionally, brain imaging experiments in human factors research tend to avoid active behavior for fear of artifacts and a contaminated data set that would provide limited insight into brain dynamics in real working environments. To overcome these problems new analyses approaches have to be developed that identify artifacts resulting from hostile recording environments and movement-related non-brain activity stemming from eye-, head, and full-body movements. The application of methodology from the

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field of Brain-Computer Interfacing (BCI) for neuroergonomics is one approach that has significant potential to enhance ambulatory monitoring and applied testing. Passive BCIs allow for assessing aspects of the user state online, such that systems can automatically adapt to their user. This neuroadaptive technology could lead to highly efficient working environments, to auto-adaptive experimental paradigms and to a continuous tracking of cognitive and affective aspects of the user state. Hence, deployment of portable neuroimaging technologies to real time settings could help assess cognitive and motivational states of personnel assigned to perform critical tasks. This Research Topic

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gathers submissions that cover new approaches in neuroergonomics. Different article type cover advanced neuroscience methods and neuroergonomics techniques as well as analysis approaches to investigate brain dynamics in working environments. The selection of papers provides insights into new neuroergonomic research approaches that demonstrate significant advances in brain imaging technologies that become more and more mobile, Moreover, a strong trend for new analyses approaches and paradigms investigating real work settings can be seen. Together, this unique collection of latest research papers provides a comprehensive overview on the latest developments

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in neuroergonomics.

This book constitutes the refereed proceedings of the 5th International Conference on Augmented Cognition, AC 2013, held as part of the 15th International Conference on Human-Computer Interaction, HCII 2013, held in Las Vegas, USA in July 2013, jointly with 12 other thematically similar conferences. The total of 1666 papers and 303 posters presented at the HCII 2013 conferences was carefully reviewed and selected from 5210 submissions. These papers address the latest research and development efforts and highlight the human aspects of design and use of computing systems. The papers accepted for presentation

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thoroughly cover the entire field of human-computer interaction, addressing major advances in knowledge and effective use of computers in a variety of application areas. The total of 81 contributions was carefully reviewed and selected for inclusion in the AC proceedings. The papers are organized in the following topical sections: augmented cognition in training and education; team cognition; brain activity measurement; understanding and modeling cognition; cognitive load, stress and fatigue; applications of augmented cognition.

This book provides a concise overview of VR systems and their cybersickness effects, giving a description of possible reasons and existing solutions to reduce or

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avoid them. Moreover, the book explores the impact that understanding how efficiently our brains are producing a coherent and rich representation of the perceived outside world would have on helping VR technics to be more efficient and friendly to use. Getting Rid of Cybersickness will help readers to understand the underlying technics and social stakes involved, from engineering design to autonomous vehicle motion sickness to video games, with the hope of providing an insight of VR sickness induced by the emerging immersive technologies. This book will therefore be of interest to academics, researchers and designers within the field of VR, as well as industrial users of VR and driving simulators.

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Human Factors and Ergonomics have made a considerable contribution to the research, design, development, operation and analysis of transportation systems which includes road and rail vehicles and their complementary infrastructure, aviation and maritime transportation. This book presents recent advances in the Human Factors aspects of Transportation. These advances include accident analysis, automation of vehicles, comfort, distraction of drivers (understanding of distraction and how to avoid it), environmental concerns, in-vehicle systems design, intelligent transport systems, methodological developments, new systems and technology, observational and case studies, safety, situation

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awareness, skill development and training, warnings and workload. This book brings together the most recent human factors work in the transportation domain, including empirical research, human performance and other types of modeling, analysis, and development. The issues facing engineers, scientists, and other practitioners of human factors in transportation research are becoming more challenging and more critical. The common theme across these sections is that they deal with the intersection of the human and the system. Moreover, many of the chapter topics cross section boundaries, for instance by focusing on function allocation in NextGen or on the safety benefits of a tower

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controller tool. This is in keeping with the systemic nature of the problems facing human factors experts in rail and road, aviation and maritime research– it is becoming increasingly important to view problems not as isolated issues that can be extracted from the system environment, but as embedded issues that can only be understood as a part of an overall system.

Index Medicus

Advances in Virtual Reality and Anxiety Disorders

Advances in Human Factors in Simulation and Modeling

Fatigue and Driving

Bio-inspired Systems and Applications: from Robotics to Ambient Intelligence

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Intelligent Vehicles

This book provides readers with a timely snapshot of modeling and simulation tools, including virtual and mixed-reality environment, for human factors research. It covers applications in healthcare and physical ergonomics, military and transportation systems, industrial monitoring, as well as economics and social sciences. Based on the AHFE 2021 International Conference on Human Factors and Simulation and the AHFE 2021 International Conference on Digital Human Modeling and Applied Optimization, held virtually on 25–29 July, 2021, from USA, the book offers a unique

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resource for modelling and simulation researchers seeking insights into human factors research and to human factors experts seeking reliable computational tools.

This book discusses the latest advances in research and development, design, operation and analysis of transportation systems and their complementary infrastructures. It reports on both theories and case studies on road and rail, aviation and maritime transportation. The book covers a wealth of topics, from accident analysis, vehicle intelligent control, and human-error and safety issues to next-generation transportation systems, model-based design methods, simulation and

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training techniques, and many more. A special emphasis is given to smart technologies and automation in transport, as well as to user-centered, ergonomic and sustainable design of transport systems. The book, which is based on the AHFE 2016 International Conference on Human Factors in Transportation, held on July 27-31, 2016, in Walt Disney World®, Florida, USA, mainly addresses transportation system designers, industrial designers, human-computer interaction researchers, civil and control engineers, as well as vehicle system engineers. Moreover, it represents a timely source of information for transportation policy-makers and social scientists dealing with traffic safety,

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management, and sustainability issues in transport. This book focuses on computational modeling and simulation research that advances the current state-of-the-art regarding human factors in this area. It reports on cutting-edge simulators such as virtual and augmented reality, on multisensory environments, and on modeling and simulation methods used in various applications, including surgery, military operations, occupational safety, sports training, education, transportation and robotics. Based on the AHFE 2018 International Conference on Human Factors in Simulation and Modeling, held on July 21–25, 2018, in Orlando, Florida, USA, the book serves as a timely reference guide for

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researchers and practitioners developing new modeling and simulation tools for analyzing or improving human performance. It also offers a unique resource for modelers seeking insights into human factors research and more feasible and reliable computational tools to foster advances in this exciting research field.

This book constitutes the refereed proceedings of the 8th International Conference on Augmented Reality, Virtual Reality, and Computer Graphics, AVR 2021, held in Italy, in September 2021. Due to COVID-19 pandemic the conference was held virtually. The 38 full and 14 short papers were carefully reviewed and selected from 69 submissions. The papers discuss key issues,

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approaches, ideas, open problems, innovative applications and trends in virtual reality, augmented reality, mixed reality, applications in cultural heritage, in medicine, in education, and in industry.

Proceedings of SAE-China Congress 2016: Selected Papers

Research, Practice, Policy, and Directions

Driver Impairment, Driver Fatigue, And Driving Simulation

Advances in Human Aspects of Transportation: Part III

Proceedings of the FISITA 2012 World Automotive Congress

Safety, Health and Welfare in Agriculture and Agro-food

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Systems

Foundations of Augmented Cognition

**This book focuses on the predictive capabilities derived from digital representation of humans in simulation or virtual environments. It reports on models that facilitate prediction of safety and performance, and describes both innovative visualization techniques as well as the underlying mathematics and science. Contributions cover a wealth of topics, including simulation tools and platforms, virtual interactive design, model optimization methods, ontologies and knowledge-based decision support, human-computer**

**interaction, human augmentation, and many others. The book gives special emphasis to cutting-edge simulation applications of human system modeling and optimization, including aviation, manufacturing and service industries, automotive design, product design, healthcare, sustainability, and emergency management. Based on the AHFE 2016 International Conference on Digital Human Modeling and Simulation, held on July 27-31, 2016, in Walt Disney World®, Florida, USA, it is intended as timely survey for researchers, engineers, designers, applied mathematicians and**

**practitioners working in the field of Human Factors and Ergonomics.**

**The book investigates how, and which, forgiving road environments (FOR) and self-explaining road measures (SER) will contribute to increasing road safety and also increase network efficiency on the road. It presents both the general approach and the methodology for generating the possible FOR and SER measures. The book further discusses the prioritization and the testing methodologies, as well as the designing VMS methodology. The next parts of the book present a few important examples: lane**

**departure warning systems; intelligent speed adaptation systems and perception enhancement studies; designs of European pictorial signs, e.g. for VMS but also examples of designs of European road wordings; and finally how personalization can take place of VMS signs and wordings for the individual driver. The last part shows the final evaluation of FOR and SER, and detailed Multiple Criterion Analysis and Cost Benefit Analyses are performed on a number of FOR and SER measures. This results in the development of a set of guidelines, conclusions and recommendations for the future.**

**The two volume set LNCS 13258 and 13259 constitutes the proceedings of the International Work-Conference on the Interplay Between Natural and Artificial Computation, IWINAC 2022, held in Puerto de la Cruz, Tenerife, Spain in May - June 2022. The total of 121 contributions was carefully reviewed and selected from 203 submissions. The papers are organized in two volumes, with the following topical sub-headings: Part I: Machine Learning in Neuroscience; Neuromotor and Cognitive Disorders; Affective Analysis; Health Applications Part II: Affective Computing in Ambient**

**Intelligence; Bioinspired Computing Approaches;  
Machine Learning in Computer Vision and Robot;  
Deep Learning; Artificial Intelligence  
Applications.**

**This book presents the results of the successful  
Sensors Special Issue on Intelligent Vehicles that  
received submissions between March 2019 and  
May 2020. The Guest Editors of this Special Issue  
are Dr. David Fernández-Llorca, Dr. Ignacio Parra-  
Alonso, Dr. Iván García-Daza and Dr. Noelia Parra-  
Alonso, all from the Computer Engineering  
Department at the University of Alcalá (Madrid,  
Spain). A total of 32 manuscripts were finally**

**accepted between 2019 and 2020, presented by top researchers from all over the world. The reader will find a well-representative set of current research and developments related to sensors and sensing for intelligent vehicles. The topics of the published manuscripts can be grouped into seven main categories: (1) assistance systems and automatic vehicle operation, (2) vehicle positioning and localization, (3) fault diagnosis and fail-x systems, (4) perception and scene understanding, (5) smart regenerative braking systems for electric vehicles, (6) driver behavior modeling**

**and (7) intelligent sensing. We, the Guest Editors, hope that the readers will find this book to contain interesting papers for their research, papers that they will enjoy reading as much as we have enjoyed organizing this Special Issue**

**Volume 8: Vehicle Design and Testing (II)**

**Social Robotics**

**Handbook of Teen and Novice Drivers**

**Vehicle Simulation**

**Automotive, Energy Generation, Quality Control and Efficiency**

**Virtual Assembly, Virtual Planning and Virtual Monitoring**

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### **12th International Conference, ICIRA 2019, Shenyang, China, August 8-11, 2019, Proceedings, Part V**

This unique edited collection derives from an international workshop uniting experts from the transport industry, legislators and research workers. The text focuses on issues from fatigue and their impact on performance and safety. *Fatigue and Driving* provides an overview of the individual and organisational perspectives of the problem including its many causes and consequences. Transport drivers describe their real-life experience of fatigue and how they identify and manage it; transport managers discuss the demands and constraints on their industry; researchers discuss their current

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research methodologies and the use of driving simulators. Neuroergonomics can be defined as the study of brain and behavior at work. It combines two disciplines -- neuroscience, the study of brain function, and human factors, the study of how to match technology with the capabilities and limitations of people so they can work effectively and safely. The goal of merging these two fields is to use the startling discoveries of human brain and physiological functioning both to inform the design of technologies in the workplace and home, and to provide new training methods that enhance performance, expand capabilities, and optimize the fit between people and technology. Research in the area of neuroergonomics has blossomed in recent years with the emergence of noninvasive techniques for monitoring human brain function that can be

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used to study various aspects of human behavior in relation to technology and work, including mental workload, visual attention, working memory, motor control, human-automation interaction, and adaptive automation. The proposed volume will provide the first systematic overview of this emerging area, describing the theoretical background, basic research, major methods, as well as the new and future areas of application. This collection will benefit a number of readers: the experienced researcher investigating related questions in human factors and cognitive neuroscience, the student wishing to get a rapid but systematic overview of the field, and the designer interested in novel approaches and new ideas for application. Researchers in human factors and ergonomics, neuroscience, cognitive psychology, medicine,

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industrial engineering, and computer science will find this volume useful.

The 2 volume-set of LNCS 12190 and 12191 constitutes the refereed proceedings of the 12th International Conference on Virtual, Augmented and Mixed Reality, VAMR 2020, which was due to be held in July 2020 as part of HCI International 2020 in Copenhagen, Denmark. The conference was held virtually due to the COVID-19 pandemic. A total of 1439 papers and 238 posters have been accepted for publication in the HCII 2020 proceedings from a total of 6326 submissions. The 71 papers included in these HCI 2020 proceedings were organized in topical sections as follows: Part I: design and user experience in VAMR; gestures and haptic interaction in VAMR; cognitive, psychological and health aspects in VAMR;

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robots in VAMR. Part II: VAMR for training, guidance and assistance in industry and business; learning, narrative, storytelling and cultural applications of VAMR; VAMR for health, well-being and medicine.

The volume set LNAI 11740 until LNAI 11745 constitutes the proceedings of the 12th International Conference on Intelligent Robotics and Applications, ICIRA 2019, held in Shenyang, China, in August 2019. The total of 378 full and 25 short papers presented in these proceedings was carefully reviewed and selected from 522 submissions. The papers are organized in topical sections as follows: Part I: collective and social robots; human biomechanics and human-centered robotics; robotics for cell manipulation and characterization; field robots; compliant mechanisms; robotic grasping and

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manipulation with incomplete information and strong disturbance; human-centered robotics; development of high-performance joint drive for robots; modular robots and other mechatronic systems; compliant manipulation learning and control for lightweight robot. Part II: power-assisted system and control; bio-inspired wall climbing robot; underwater acoustic and optical signal processing for environmental cognition; piezoelectric actuators and micro-nano manipulations; robot vision and scene understanding; visual and motional learning in robotics; signal processing and underwater bionic robots; soft locomotion robot; teleoperation robot; autonomous control of unmanned aircraft systems. Part III: marine bio-inspired robotics and soft robotics: materials, mechanisms, modelling, and control; robot intelligence

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technologies and system integration; continuum mechanisms and robots; unmanned underwater vehicles; intelligent robots for environment detection or fine manipulation; parallel robotics; human-robot collaboration; swarm intelligence and multi-robot cooperation; adaptive and learning control system; wearable and assistive devices and robots for healthcare; nonlinear systems and control. Part IV: swarm intelligence unmanned system; computational intelligence inspired robot navigation and SLAM; fuzzy modelling for automation, control, and robotics; development of ultra-thin-film, flexible sensors, and tactile sensation; robotic technology for deep space exploration; wearable sensing based limb motor function rehabilitation; pattern recognition and machine learning; navigation/localization. Part V: robot legged

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locomotion; advanced measurement and machine vision system; man-machine interactions; fault detection, testing and diagnosis; estimation and identification; mobile robots and intelligent autonomous systems; robotic vision, recognition and reconstruction; robot mechanism and design. Part VI: robot motion analysis and planning; robot design, development and control; medical robot; robot intelligence, learning and linguistics; motion control; computer integrated manufacturing; robot cooperation; virtual and augmented reality; education in mechatronics engineering; robotic drilling and sampling technology; automotive systems; mechatronics in energy systems; human-robot interaction.

12th International Conference, VAMR 2020, Held as Part of the 22nd HCI International Conference, HCII 2020,

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Copenhagen, Denmark, July 19–24, 2020, Proceedings, Part I

Virtual, Augmented and Mixed Reality. Design and Interaction Intelligent Robotics and Applications

Virtual Reality Technology in Mining Machinery

Proceedings of the 7th International Conference on Structural Engineering, Mechanics and Computation (SEMC 2019),

September 2-4, 2019, Cape Town, South Africa

Cases on 3D Technology Application and Integration in Education

In Virtual Reality, Augmented Reality, and Simulators

the 10th anniversary of Chinese Journal of Construction Machinery. In order to celebrate the 20th anniversary of

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the association and the 10th anniversary of the journal, we will hold the following activities this year. 1. Continue to convene the fourth International Conference Symposium of 2013 on Construction Machinery and Vehicle Engineering Research Progress. 2. Continue to convene the fifth National Mechanical Engineering Doctoral Forum. This forum will be held in Xuzhou and the time is from August 20 to August 24 in 2013. 3. The highlevel expert forum will be held during Changsha Engineering Machinery Parts Expo. A dialogue will be taken on the issues of industry scientific innovation, accessories, testing and quality among universities, research institutes and enterprises. 4. The celebrations about the 20th anniversary

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of the association and the 10th anniversary of the journal will be conducted in Shanghai. The council of the new editorial board and the executive director is convened for summing up the work of the association since it was founded 20 years ago and the work of the journal since it was founded 10 years ago, and planning for the future development. This International Conference is held in the circumstance of international economic crisis and domestic industrial structure adjustment. In the past year, sales market of construction machinery has been subjected to a certain shocks, and the enterprises have encountered a certain difficulties. For the future, however, I believe that such difficulties are temporary, and the prospect is bright.

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The construction machinery is to serve the mining and state infrastructure construction, and for China, along with most countries in the world which are developing countries, the infrastructure construction is still a significant part in the course of development, and the sound infrastructure will promote the development of their economies, even these countries which are in the leading position in economy development also attach great importance to the improvement of infrastructure. Therefore, construction machinery is indispensable and has a rigid demand. Currently, the international competition has not been only limited to terrestrial, since the possession of terrestrial was a foregone conclusion, but

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there will be more

This book gathers the latest advances, innovations and applications in the field of agricultural biotechnology, agro-food systems and forestry, as presented by leading international researchers and engineers at the 5th International Conference on Safety, Health and Welfare in Agriculture and Agro-food Systems (SHWA), held in Ragusa, Italy, on September 15-18, 2021. The papers cover a range of topics such as agricultural assistive technologies, machine milking, animal welfare, sustainable livestock farming, work organization and logistic in agro-food supply chain, agricultural instrumentation and equipment, safety and health in building, agriculture 4.0, automation,

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occupational health, precision farming, effect of landscapes on human health, environmental safety, rural health, agricultural machinery, ROPS, augmented reality and IoT, cyber security. The contributions included in the book were selected by means of a rigorous peer-review process, and offer an extensive and multidisciplinary overview of interesting solutions in the field of sustainable agriculture. This book covers the problem of fidelity in the design of virtual environments with specific reference to the design of vehicle simulators. The default design goal has been on the physical replication of a given real-world environment and, in the case of vehicles, the specific appearance and function of vehicle components. This book discusses that

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perceptual, rather than physical, fidelity of a virtual environment, should be the design goal and the principal purpose is to produce human behavior. This book provides the rationale and design guidance to maximize perceptual fidelity in the development of virtual environments, and therefore maximize the costeffectiveness as well.

Vols. for 1963- include as pt. 2 of the Jan. issue: Medical subject headings.

Computational Methods for Translational Brain-Behavior Analysis

Proceedings of the AHFE 2021 Virtual Conference on Human Aspects of Transportation, July 25-29, 2021, USA  
Proceedings of the AHFE 2021 Virtual Conferences on

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Human Factors and Simulation, and Digital Human Modeling and Applied Optimization, July 25-29, 2021, USA

9th International Work-Conference on the Interplay Between Natural and Artificial Computation, IWINAC 2022, Puerto de la Cruz, Tenerife, Spain, May 31 – June 3, 2022, Proceedings, Part II

Handbook of Driving Simulation for Engineering, Medicine, and Psychology

An Integrated Solution Based Irregular Driving Detection Proceedings of the AHFE 2018 International Conferences on Human Factors and Simulation and Digital Human Modeling and Applied Optimization, Held on July 21–25,

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2018, in Loews Sapphire Falls Resort at Universal Studios, Orlando, Florida, USA

***This book provides an open platform to establish and share knowledge developed by scholars, scientists, and engineers from all over the world, about various applications of the modeling and simulation in the design process of products, in various engineering fields. The book consists of 12 chapters arranged in two sections (3D Modeling and Virtual Prototyping), reflecting the multidimensionality of applications related to modeling and simulation. Some of the most recent modeling and simulation techniques, as well as some of the most accurate and sophisticated software in treating complex systems, are applied. All the original contributions in this***

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***book are jointed by the basic principle of a successful modeling and simulation process: as complex as necessary, and as simple as possible. The idea is to manipulate the simplifying assumptions in a way that reduces the complexity of the model (in order to make a real-time simulation), but without altering the precision of the results.***

***Proceedings of the FISITA 2012 World Automotive Congress are selected from nearly 2,000 papers submitted to the 34th FISITA World Automotive Congress, which is held by Society of Automotive Engineers of China (SAE-China ) and the International Federation of Automotive Engineering Societies (FISITA). This proceedings focus on solutions for sustainable***

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***mobility in all areas of passenger car, truck and bus transportation. Volume 8: Vehicle Design and Testing (II) focuses on:***

- Automotive Reliability Technology***
- Lightweight Design Technology***
- Design for Recycling***
- Dynamic Modeling***
- Simulation and Experimental Validation***
- Virtual Design, Testing and Validation***
- Testing of Components, Systems and Full Vehicle***

***Above all researchers, professional engineers and graduates in fields of automotive engineering, mechanical engineering and electronic engineering will benefit from this book. SAE-China is a national academic organization composed of enterprises and professionals who focus on research, design and education in the fields of automotive and related industries. FISITA is the***

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***umbrella organization for the national automotive societies in 37 countries around the world. It was founded in Paris in 1948 with the purpose of bringing engineers from around the world together in a spirit of cooperation to share ideas and advance the technological development of the automobile.***