Palaniswamy Engineering Physics

Nanoscience and Nanotechnology in Security and Protection against CBRN ThreatsParallel Computational Fluid Dynamics '98Corrosion EngineeringActive and Assisted LivingDissertation Abstracts InternationalSmart Computing and InformaticsManufacturing Engineering and Materials Handling--2005Engineering Physics-IMechatronic FuturesTelomereEngineering PhysicsMultifractals and Chronic Diseases of the Central Nervous SystemMachine Learning and Cognitive Computing for Mobile Communications and Wireless NetworksEMBEC & NBC 2017Production EconomicsEngineering Physics (Annual Pattern)A Report for the Year of the Research and Other Activities of the Division of Engineering and Applied Science at the California Institute of TechnologyMechanicsPrinciples of Neural CodingApplied Physics (jntu)92-3400 - 92-3429Mechanics: 1970Corrosion Engineering and Cathodic Protection HandbookHands-On Intelligent Agents with OpenAI GymConcrete-steel Construction (Der Eisenbetonbau)ENGINEERING PHYSICS.Intelligent Patient ManagementEngineering Physics ITransactions on Engineering Technologies15th Nordic-Baltic Conference on Biomedical Engineering and Medical PhysicsConvex OptimizationMicro-Electronics and Telecommunication EngineeringLaser Additive ManufacturingRheology and Processing of Polymer NanocompositesComputational Intelligence in Biomedical EngineeringBasic Civil EngineeringIndian Journal of Pure & Applied PhysicsSelf-Sensing Concrete in Smart StructuresPoincaré Plot Methods for Heart Rate Variability AnalysisJournal of the

Engineering Mechanics Division

Nanoscience and Nanotechnology in Security and Protection against CBRN Threats

The Poincaré plot (named after Henri Poincaré) is a popular two-dimensional visualization tool for dynamic systems due to its intuitive display of the dynamic properties of a system from a time series. This book presents the basis of Poincaré plot and focus especially on traditional and new methods for analysing the geometry, temporal and spatial dynamics disclosed by the Poincaré plot to evaluate heart rate variability (HRV). Mathematical descriptors of Poincaré plot have been developed to quantify the autonomic nervous system activity (sympathetic and parasympathetic modulation of heart rate). Poincaré plot analysis has also been used in various clinical diagnostic settings like diabetes, chronic heart failure, chronic renal failure and sleep apnea syndrome. The primary aims of quantification of the Poincaré plots are to discriminate healthy physiological systems from pathological conditions and to classify the stage of a disease. The HRV analysis by Poincaré plot has opened up ample opportunities for important clinical and research applications. Therefore, the present book can be used either for self-study, as a supplement to courses in linear and nonlinear systems, or as a modern monograph by researchers in this field of HRV analysis.

Parallel Computational Fluid Dynamics '98

Corrosion Engineering

Active and Assisted Living

This volume contains a selection of revised and extended research articles written by prominent researchers participating in the 25th International MultiConference of Engineers and Computer Scientists (IMECS 2017) which was held in Hong Kong, 15-17 March, 2017. Topics covered include electrical engineering, communications systems, engineering mathematics, engineering physics, and industrial applications. With contributions carefully chosen to represent the most cutting-edge research presented during the conference, the book offers the state of art in engineering technologies and physical science and applications, and also serves as an excellent reference work for researchers and graduate students working with/on engineering technologies and physical science and applications.

Dissertation Abstracts International

Smart Computing and Informatics

Healthcare approaches with origins in Artificial Intelligence and Operational Research can greatly improve the diagnosis, treatment and overall care of patients. This book focuses on the use of such Intelligent Patient Management for healthcare professionals.

Manufacturing Engineering and Materials Handling--2005

Understanding how populations of neurons encode information is the challenge faced by researchers in the field of neural coding. Focusing on the many mysteries and marvels of the mind has prompted a prominent team of experts in the field to put their heads together and fire up a book on the subject. Simply titled Principles of Neural Coding, this book covers the complexities of this discipline. It centers on some of the major developments in this area and presents a complete assessment of how neurons in the brain encode information. The book collaborators contribute various chapters that describe results in different systems (visual, auditory, somatosensory perception, etc.) and different species (monkeys, rats, humans, etc). Concentrating on the recording and analysis of the firing of single and multiple neurons, and the analysis and recording of other integrative measures of network activity and network states—such as local field potentials or current

source densities—is the basis of the introductory chapters. Provides a comprehensive and interdisciplinary approach Describes topics of interest to a wide range of researchers The book then moves forward with the description of the principles of neural coding for different functions and in different species and concludes with theoretical and modeling works describing how information processing functions are implemented. The text not only contains the most important experimental findings, but gives an overview of the main methodological aspects for studying neural coding. In addition, the book describes alternative approaches based on simulations with neural networks and in silico modeling in this highly interdisciplinary topic. It can serve as an important reference to students and professionals.

Engineering Physics-I

This book, Telomere - A Complex End of a Chromosome, is organized into nine chapters containing the latest aspects of the current knowledge about the structure of telomeres and the crucial role that telomerase plays not only in maintaining chromosomal stability but also in relation to cell immortality, cell instability, and cancer biology. We now appreciate that these unusual complexes of DNA and proteins we all know as "telomeres" are dynamic and key structures that depend on telomerase and other cellular factors for continuance. Regulation of telomere activity is a dynamic area of current research, and new insights into

telomeres and their role in aging and cancer, among other biological functions and pathologies, appear regularly in the scientific world. However, one fact is more than understandable in this difficult biological conundrum: the end of the telomere story is far from being totally unraveled.

Mechatronic Futures

Concrete is the second most used building material in the world after water. The problem is that over time the material becomes weaker. As a response, researchers and designers are developing self-sensing concrete which not only increases longevity but also the strength of the material. Self-Sensing Concrete in Smart Structures provides researchers and designers with a guide to the composition, sensing mechanism, measurement, and sensing properties of self-healing concrete along with their structural applications Provides a systematic discussion of the structure of intrinsic self-sensing concrete Compositions of intrinsic self-sensing concrete and processing of intrinsic self-sensing concrete Explains the sensing mechanism, measurement, and sensing properties of intrinsic self-sensing concrete

Telomere

Engineering Physics

Corrosion costs billions of dollars to each and every single economy in the world. Corrosion is a chemical process, and it is crucial to understand the dynamics from a chemical perspective before proceeding with analyses, designs and solutions from an engineering aspect. The opposite is also true in the sense that scientists should take into consideration the contemporary aspects of the issue as it relates to the daily life before proceeding with specifically designed theoretical solutions. Corrosion Engineering is advised to both theoreticians and practitioners of corrosion alike. Corrosion engineering is a joint discipline associated primarily with major engineering sciences such as chemical engineering, civil engineering, petroleum engineering, mechanical engineering, metallurgical engineering, mining engineering among others and major fundamental sciences such as sub-disciplines of physical, inorganic and analytical chemistry as well as physics and biology, such as electrochemistry, surface chemistry, surface physics, solution chemistry, solid state chemistry and solid state physics, microbiology, and others. Corrosion Engineering is a must-have reference book for the engineer in the field that covers the corrosion process with its contemporary aspects with respect to both of its scientific and engineering aspects. It is also a valuable textbook that could be used in an engineering or scientific course on corrosion at the university level.

Multifractals and Chronic Diseases of the Central Nervous System

This volume presents the proceedings of the joint conference of the European Medical and Biological Engineering Conference (EMBEC) and the Nordic-Baltic Conference on Biomedical Engineering and Medical Physics (NBC), held in Tampere, Finland, in June 2017. The proceedings present all traditional biomedical engineering areas, but also highlight new emerging fields, such as tissue engineering, bioinformatics, biosensing, neurotechnology, additive manufacturing technologies for medicine and biology, and bioimaging, to name a few. Moreover, it emphasizes the role of education, translational research, and commercialization.

Machine Learning and Cognitive Computing for Mobile Communications and Wireless Networks

EMBEC & NBC 2017

This volume contains 74 papers presented at SCI 2016: First International Conference on Smart Computing and Informatics. The conference was held during 3-4 March 2017, Visakhapatnam, India and organized communally by ANITS,

Visakhapatnam and supported technically by CSI Division V – Education and Research and PRF, Vizag. This volume contains papers mainly focused on applications of advanced intelligent techniques to video processing, medical imaging, machine learning, sensor technologies, and network security.

Production Economics

The Corrosion Engineering and Cathodic Protection Handbook combines the author's previous three works, Corrosion Chemistry, Cathodic Protection, and Corrosion Engineering to offer, in one place, the most comprehensive and thorough work available to the engineer or student. The author has also added a tremendous and exhaustive list of questions and answers based on the text, which can be used in university courses or industry courses, something that has never been offered before in this format. The Corrosion Engineering and Cathodic Protection Handbook is a must-have reference book for the engineer in the field, covering the process of corrosion from a scientific and engineering aspect, along with the prevention of corrosion in industrial applications. It is also a valuable textbook, with the addition of the questions and answers section creating a unique book that is nothing short of groundbreaking. Useful in solving day-to-day problems for the engineer, and serving as a valuable learning tool for the student, this is sure to be an instant contemporary classic and belongs in any engineer's library.

Engineering Physics (Annual Pattern)

This book covers all relevant topics in Applied Physics taught to the students in EEE, ECE, EIE, E.cont.E, ICE, CSE, CSIT, CSSE, ETM, ECM and BME branches of Jawaharlal Nehru Technological University (JNTU), Hyderabad. This book gives 100% coverage of the syllabus and it is as per the 2007 Revised JNTU Syllabus of Applied Physics. * Written aiming 100% coverage of revised syllabus of Applied Physics of JNTU (2007 - 2008) * Typical questions appeared in the examinations of JNTU are included at the end of each chapter. * Solved and exercise problems are included to develop the skill in analytical thought and numerical calculation. * Summary of the entire text is given at the end of each chapter. * Objective type questions are given to enable the students to prepare for their vivavoce examination.

A Report for the Year of the Research and Other Activities of the Division of Engineering and Applied Science at the California Institute of Technology

As in many other fields, biomedical engineers benefit from the use of computational intelligence (CI) tools to solve complex and non-linear problems. The benefits could be even greater if there were scientific literature that

specifically focused on the biomedical applications of computational intelligence techniques. The first comprehensive field-specific reference, Computational Intelligence in Biomedical Engineering provides a unique look at how techniques in CI can offer solutions in modelling, relationship pattern recognition, clustering, and other problems particular to the field. The authors begin with an overview of signal processing and machine learning approaches and continue on to introduce specific applications, which illustrate CI's importance in medical diagnosis and healthcare. They provide an extensive review of signal processing techniques commonly employed in the analysis of biomedical signals and in the improvement of signal to noise ratio. The text covers recent CI techniques for post processing ECG signals in the diagnosis of cardiovascular disease and as well as various studies with a particular focus on CI's potential as a tool for gait diagnostics. In addition to its detailed accounts of the most recent research, Computational Intelligence in Biomedical Engineering provides useful applications and information on the benefits of applying computation intelligence techniques to improve medical diagnostics.

Mechanics

Principles of Neural Coding

Active and Assisted Living (AAL) systems aim at improving the quality of life and supporting independent and healthy living of older or impaired people by using a distributed network of sensors and actuators to create a ubiquitous technological layer, able to interact transparently with the users, observing and interpreting their actions and intentions, learning their preferences and adjusting the parameters of the system to improve their quality of life and work. This book provides a comprehensive review of the technologies and applications for AAL. Topics covered include the current state of the art of smart environments and labs from an AAL point of view; ambient and wearable sensors for human health monitoring; computer vision for active and assisted living; data fusion for identifying lifestyle patterns; interoperable enhanced living environments; reasoning systems for AAL; person-environment interaction; data analytics for enabling connected health; human gait analysis for frailty detection; fall prevention and detection; supporting activities of daily living; outdoor mobility assistance; location and orientation technologies based on WiFi systems; health, wellbeing and engagement in life through AAL; tablet-based clinical decision support system for hospitalised older adults; smart, age-friendly cities and communities; privacy and ethical issues; and human-centred design. The book concludes with a case study on the design and implementation of a smart home technological platform for the delivery of AAL services. With a wide range of chapters from international contributors, this book is essential reading for researchers and students in academics and industry developing AAL technologies, healthcare practitioners, and engineers with an

interest in the field.

Applied Physics (jntu)

92-3400 - 92-3429

Rheology and Processing of Polymer Nanocomposites examines the current state of the art and new challenges in the characterization of nanofiller/polymer interactions, nanofiller dispersion, distribution, filler-filler interactions and interfaces in polymer nanocomposites. A one-stop reference resource for important research accomplishments in this area, it benefits academics, researchers, scientists, and engineers in the field of polymer nanocomposites in their daily work.

Mechanics: 1970

This book contains the papers presented at the Parallel Computational Fluid Dynamics 1998 Conference. The book is focused on new developments and applications of parallel technology. Key topics are introduced through contributed papers and invited lectures. These include typical algorithmic developments, such as: distributed computing, domain decomposition and parallel algorithm. Some of

the papers address the evaluations of software and machine performance and software tool environments. The application of parallel computers to complex fluid dynamics problems are also conveyed through sessions such as DNS/LES, combustion and reacting flows, industrial applications, water resources and environmental flows. The editors believe this book will provide many researchers, much beyond those contributing to this volume, with fresh information and reference.

Corrosion Engineering and Cathodic Protection Handbook

Convex optimization problems arise frequently in many different fields. This book provides a comprehensive introduction to the subject, and shows in detail how such problems can be solved numerically with great efficiency. The book begins with the basic elements of convex sets and functions, and then describes various classes of convex optimization problems. Duality and approximation techniques are then covered, as are statistical estimation techniques. Various geometrical problems are then presented, and there is detailed discussion of unconstrained and constrained minimization problems, and interior-point methods. The focus of the book is on recognizing convex optimization problems and then finding the most appropriate technique for solving them. It contains many worked examples and homework exercises and will appeal to students, researchers and practitioners in fields such as engineering, computer science, mathematics, statistics, finance and

economics.

Hands-On Intelligent Agents with OpenAI Gym

Concrete-steel Construction (Der Eisenbetonbau)

ENGINEERING PHYSICS.

Offering a comprehensive overview of the challenges, risks and options facing the future of mechatronics, this book provides insights into how these issues are currently assessed and managed. Building on the previously published book 'Mechatronics in Action,' it identifies and discusses the key issues likely to impact on future mechatronic systems. It supports mechatronics practitioners in identifying key areas in design, modeling and technology and places these in the wider context of concepts such as cyber-physical systems and the Internet of Things. For educators it considers the potential effects of developments in these areas on mechatronic course design, and ways of integrating these. Written by experts in the field, it explores topics including systems integration, design, modeling, privacy, ethics and future application domains. Highlighting novel

innovation directions, it is intended for academics, engineers and students working in the field of mechatronics, particularly those developing new concepts, methods and ideas.

Intelligent Patient Management

Engineering Physics I

Engineering Physics is designed to cater to the needs of first year undergraduate engineering students. Written in a lucid style, this book assimilates the best practices of conceptual pedagogy, dealing at length with various topics such as crystallography, principles of quantum mechanics, free electron theory of metals, dielectric and magnetic properties, semiconductors, nanotechnology, etc.

Transactions on Engineering Technologies

15th Nordic-Baltic Conference on Biomedical Engineering and Medical Physics

Convex Optimization

Micro-Electronics and Telecommunication Engineering

This book primarily focuses on the study of various neurological disorders, including Parkinson's (PD), Huntington (HD), Epilepsy, Alzheimer's and Motor Neuron Diseases (MND) from a new perspective by analyzing the physiological signals associated with them using non-linear dynamics. The development of nonlinear methods has significantly helped to study complex nonlinear systems in detail by providing accurate and reliable information. The book provides a brief introduction to the central nervous system and its various disorders, their effects on health and quality of life, and their respective courses of treatment, followed by different bioelectrical signals like those detected by Electroencephalography (EEG), Electrocardiography (ECG), and Electromyography (EMG). In turn, the book discusses a range of nonlinear techniques, fractals, multifractals, and Higuchi's Fractal Dimension (HFD), with mathematical examples and procedures. A review of studies conducted to date on neurological disorders like epilepsy, dementia, Parkinson's, Huntington, Alzheimer's, and Motor Neuron Diseases, which incorporate linear and nonlinear techniques, is also provided. The book subsequently presents new findings on neurological disorders of the central

nervous system, namely Parkinson's disease and Huntington's disease, by analyzing their gait characteristics using a nonlinear fractal based technique: Multifractal Detrended Fluctuation Analysis (MFDFA). In closing, the book elaborates on several parameters that can be obtained from cross-correlation studies of ECG and blood pressure, and can be used as markers for neurological disorders.

Laser Additive Manufacturing

This book is based on the lectures and contributions of the NATO Advanced Study Institute on "Nanoscience and Nanotechnology in Security and Protection Against CBRN Threats" held in Sozopol, Bulgaria, September 2019. It gives a broad overview on this topic as it combines articles addressing the preparation and characterization of different nanoscaled materials (metals, oxides, glasses, polymers, carbon-based, etc.) in the form of nanowires, nanoparticles, nanocomposites, nanodots, thin films, etc. and contributions on their applications in diverse security and safety related fields. In addition, it presents an interdisciplinary approach drawing on the Nanoscience and Nanotechnology know-how of authors from Physics, Chemistry, Engineering, Materials Science and Biology. A further plus-point of the book, which represents the knowledge of experts from over 20 countries, is the combination of longer papers introducing the background on a certain topic, and brief contributions highlighting specific

applications in different security areas.

Rheology and Processing of Polymer Nanocomposites

Computational Intelligence in Biomedical Engineering

Communication and network technology has witnessed recent rapid development and numerous information services and applications have been developed globally. These technologies have high impact on society and the way people are leading their lives. The advancement in technology has undoubtedly improved the quality of service and user experience yet a lot needs to be still done. Some areas that still need improvement include seamless wide-area coverage, high-capacity hot-spots, low-power massive-connections, low-latency and high-reliability and so on. Thus, it is highly desirable to develop smart technologies for communication to improve the overall services and management of wireless communication. Machine learning and cognitive computing have converged to give some groundbreaking solutions for smart machines. With these two technologies coming together, the machines can acquire the ability to reason similar to the human brain. The research area of machine learning and cognitive computing cover many fields like psychology, biology, signal processing, physics, information theory, mathematics, and statistics

that can be used effectively for topology management. Therefore, the utilization of machine learning techniques like data analytics and cognitive power will lead to better performance of communication and wireless systems.

Basic Civil Engineering

Implement intelligent agents using PyTorch to solve classic AI problems, play console games like Atari, and perform tasks such as autonomous driving using the CARLA driving simulator Key Features Explore the OpenAI Gym toolkit and interface to use over 700 learning tasks Implement agents to solve simple to complex AI problems Study learning environments and discover how to create your own Book Description Many real-world problems can be broken down into tasks that require a series of decisions to be made or actions to be taken. The ability to solve such tasks without a machine being programmed requires a machine to be artificially intelligent and capable of learning to adapt. This book is an easy-to-follow guide to implementing learning algorithms for machine software agents in order to solve discrete or continuous sequential decision making and control tasks. Hands-On Intelligent Agents with OpenAI Gym takes you through the process of building intelligent agent algorithms using deep reinforcement learning starting from the implementation of the building blocks for configuring, training, logging, visualizing, testing, and monitoring the agent. You will walk through the process of building intelligent agents from scratch to perform a variety of tasks. In the closing

chapters, the book provides an overview of the latest learning environments and learning algorithms, along with pointers to more resources that will help you take your deep reinforcement learning skills to the next level. What you will learn Explore intelligent agents and learning environments Understand the basics of RL and deep RL Get started with OpenAI Gym and PyTorch for deep reinforcement learning Discover deep Q learning agents to solve discrete optimal control tasks Create custom learning environments for real-world problems Apply a deep actor-critic agent to drive a car autonomously in CARLA Use the latest learning environments and algorithms to upgrade your intelligent agent development skills Who this book is for If you're a student, game/machine learning developer, or AI enthusiast looking to get started with building intelligent agents and algorithms to solve a variety of problems with the OpenAI Gym interface, this book is for you. You will also find this book useful if you want to learn how to build deep reinforcement learning-based agents to solve problems in your domain of interest. Though the book covers all the basic concepts that you need to know, some working knowledge of Python programming language will help you get the most out of it.

Indian Journal of Pure & Applied Physics

This book presents selected papers from the 3rd International Conference on Micro-Electronics and Telecommunication Engineering, held at SRM Institute of Science

and Technology, Ghaziabad, India, on 30-31 August 2019. It covers a wide variety of topics in micro-electronics and telecommunication engineering, including micro-electronic engineering, computational remote sensing, computer science and intelligent systems, signal and image processing, and information and communication technology.

Self-Sensing Concrete in Smart Structures

Laser Additive Manufacturing: Materials, Design, Technologies, and Applications provides the latest information on this highly efficient method of layer-based manufacturing using metals, plastics, or composite materials. The technology is particularly suitable for the production of complex components with high precision for a range of industries, including aerospace, automotive, and medical engineering. This book provides a comprehensive review of the technology and its range of applications. Part One looks at materials suitable for laser AM processes, with Part Two discussing design strategies for AM. Parts Three and Four review the most widely-used AM technique, powder bed fusion (PBF) and discuss other AM techniques, such as directed energy deposition, sheet lamination, jetting techniques, extrusion techniques, and vat photopolymerization. The final section explores the range of applications of laser AM. Provides a comprehensive one-volume overview of advances in laser additive manufacturing Presents detailed coverage of the latest techniques used for laser additive manufacturing Reviews

both established and emerging areas of application

Poincaré Plot Methods for Heart Rate Variability Analysis

This book covers the basic theory of how, what and when firms should produce to maximise profits. Based on the neoclassical theory of the firm presented in most general microeconomic textbooks, it extends the general treatment and focuses on the application of the theory to specific problems that the firm faces when making production decisions to maximise profits. Increasing level of government regulation and the use of specialised and often very expensive equipment in modern production motivates the following focus areas: 1) How to optimise production under restrictions., 2) Treatment of fixed inputs and the process of input fixation, 3) Optimisation of production over time, 4) Linear and Mixed Integer Programming as tools for optimisation in practice. This updated second edition includes a more comprehensive introduction to the theory of decision making under risk and uncertainty as well as a new chapter on how to use linear programming to generate the supply function of the firm.

Journal of the Engineering Mechanics Division

This volume presents the Proceedings of the 15th Nordic-Baltic Conference on

Biomedical Engineering and Medical Physics. NBC 2011 brought together science, education and business under the motto “Cooperation for health”. The topics covered by the Conference Proceedings include: Imaging, Biomechanics, Neural engineering, Sport Science, Cardio-pulmonary engineering, Medical Informatics, Ultrasound, Assistive Technology, Telemedicine, and General Biomedical Engineering.

ROMANCE ACTION & ADVENTURE MYSTERY & THRILLER BIOGRAPHIES & HISTORY CHILDREN'S YOUNG ADULT FANTASY HISTORICAL FICTION HORROR LITERARY FICTION NON-FICTION SCIENCE FICTION