Neeta Deshpande Artificial Intelligence

This book constitutes the refereed proceedings of the Second International Conference on Smart Trends in Information Technology and Computer Communications, SmartCom 2017, held in Pune, India, in August 2017. The 38 revised papers presented were carefully reviewed and selected from 310 submissions. The papers address issues on smart and secure systems; smart and service computing; smart data and IT innovations.

If you're looking to make a career move from programmer to AI specialist, this is the ideal place to start. Based on Laurence Moroney's extremely successful AI courses, this introductory book provides a hands-on, code-first approach to help you build confidence while you learn key topics. You'll understand how to implement the most common scenarios in machine learning, such as computer vision, natural language processing (NLP), and sequence modeling for web, mobile, cloud, and embedded runtimes. Most books on machine learning begin with a daunting amount of advanced math. This guide is built on practical lessons that let you work directly with the code. You'll learn: How to build models with TensorFlow using skills that employers desire The basics of machine learning by working with code samples How to implement computer vision, including feature detection in images How to use NLP to tokenize and sequence words and sentences Methods for embedding models in Android and iOS How to serve models over the web and in the cloud with TensorFlow Serving

This book offers a snapshot of cutting-edge applications of mobile sensing for digital phenotyping in the field of Psychoinformatics. The respective chapters, written by authoritative researchers, cover various aspects related to the use of these technologies in health,

education, and cognitive science research. They share insights both into established applications of mobile sensing (such as predicting personality or mental and behavioral health on the basis of smartphone usage patterns) and emerging trends. Machine learning and deep learning approaches are discussed, and important considerations regarding privacy risks and ethical issues are assessed. In addition to essential background information on various technologies and theoretical methods, the book also presents relevant case studies and good scientific practices, thus addressing researchers and professionals alike. To cite Thomas R. Insel, who wrote the foreword to this book: “Patients will only use digital phenotyping if it solves a problem, perhaps a digital smoke alarm that can prevent a crisis. Providers will only use digital phenotyping if it fits seamlessly into their crowded workflow. If we can earn public trust, there is every reason to be excited about this new field. Suddenly, studying human behavior at scale, over months and years, is feasible.”

This book constitutes the refereed proceedings of the Second International Conference on Security and Privacy, ISEA-ISAP 2018, held in Jaipur, India, in January 2019. The conference was originally planned to be held in 2018 which is why the acronym contains "2018". The 21 revised full papers presented were carefully reviewed and selected from 87 submissions. The papers are organized in topical sections: authentication and access control, malware analysis, network security, privacy preservation, secure software systems and social network analytics.

This book is a collection of selected peer-reviewed papers presented at the International Conference on Signal Processing and Communication (ICSC 2018). It covers current research and developments in the fields of communications, signal processing, VLSI circuits and systems, and embedded systems. The book offers in-depth discussions and analyses of latest

problems across different sub-fields of signal processing and communications. The contents of this book will prove to be useful for students, researchers, and professionals working in electronics and electrical engineering, as well as other allied fields.

In a globalized society, effective communication is critical, and study of language from a mathematical perspective can shed light on new ways in which to express meaning across cultures and nations. Computational Linguistics: Concepts, Methodologies, Tools, and Applications explores language by dissecting the phonemic aspects of various communication systems in order to identify similarities and pitfalls in the expression of meaning. With applications in a variety of areas, from psycholinguistics and cognitive science to computer science and artificial intelligence, this multivolume reference work will be of use to researchers, professionals, and educators on the cutting edge of language acquisition and communication science.

The book enriches the literature on different sub-domains of applied information technology. The ICCAIAIT Proceedings presents the high quality research papers presented at ICCAIAIT 2018. The contributions cover the contemporary issues in data analytics, computational intelligence, nature inspired computing, cyber physical systems, cloud computing, social network and intelligent computing on climate change. The volume is an important resource for educationists, academics, scholars and practitioners from both the public and private sectors.

As technology continues to become more sophisticated, a computer’s ability to understand, interpret, and manipulate natural language is also accelerating. Persistent research in the field of natural language processing enables an understanding of the world around us, in addition to opportunities for manmade computing to mirror natural language processes that have existed

for centuries. Natural Language Processing: Concepts, Methodologies, Tools, and Applications is a vital reference source on the latest concepts, processes, and techniques for communication between computers and humans. Highlighting a range of topics such as machine learning, computational linguistics, and semantic analysis, this multi-volume book is ideally designed for computer engineers, computer and software developers, IT professionals, academicians, researchers, and upper-level students seeking current research on the latest trends in the field of natural language processing.

Plant diseases play an important role on our daily lives. Most of plant diseases are visible and are caused by biotic and/or abiotic factors. Symptoms are usually the results of a morphological change, alteration or damage to plant tissue and/or cells due to an interference of the plant's metabolism. All basic structures of vascular plants are subject to attack by pathogens. The failure in accurate disease diagnosis and management may lead to huge losses in plant production and related commodities, which causes nutritional food scarcity. Typically, the appearance of a biotic symptom will indicate the relatively late stage of an infection and/or colonization of a pathogen. Expert detection, accurate diagnosis, and timely management play a significant role in keeping plants free from pathogens. In this book expert scholars share their research knowledge and key literature which are vital toward the diagnosis of plant diseases across the globe, addressing traditional plant pathology techniques, as well as advanced molecular diagnostic approach.

This volume set contains 184 papers from the 4th Computational Methods in Systems

and Software 2020 (CoMeSySo 2020) proceedings. Software engineering, computer science and artificial intelligence are crucial topics for the research within an intelligent systems problem domain. The CoMeSySo 2020 conference is breaking the barriers, being held online. CoMeSySo 2020 intends to provide an international forum for the discussion of the latest high-quality research results.

This book constitutes the refereed proceedings of the 24th International Conference on Information and Software Technologies, ICIST 2018, held in Vilnius, Lithuania, in October 2018. The 48 papers presented were carefully reviewed and selected from 124 submissions. The papers are organized in topical sections on information systems; business intelligence for information and software systems; software engineering; and information technology applications.

This new book, by one of the most respected researchers in Artificial Intelligence, features a radical new 'evolutionary' organization that begins with low level intelligent behavior and develops complex intelligence as the book progresses.

First Published in 2012. Routledge is an imprint of Taylor & Francis, an informa company.

The scope of the conference is the analysis, design, implementation, deployment and evaluation of advanced topics of computing It aims to provide a high profile, leading edge forum for researchers, engineers, standard developers and students to showcase their latest research activities, techniques and experiences in the areas of computing

This book presents the proceedings of the 4th International Conference on Internet of Things and Connected Technologies (ICIoTCT), held on May 9–10, 2019, at Malaviya National Institute of Technology (MNIT), Jaipur, India. The Internet of Things (IoT) promises to usher in a revolutionary, fully interconnected “smart” world, with relationships between objects and their environment and objects and people becoming more tightly intertwined. The prospect of the Internet of Things as a ubiquitous array of devices bound to the Internet could fundamentally change how people think about what it means to be “online”. The ICIotCT 2019 conference provided a platform to discuss advances in Internet of Things (IoT) and connected technologies, such as various protocols and standards. It also offered participants the opportunity to interact with experts through keynote talks, paper presentations and discussions, and as such stimulated research. With the recent adoption of a variety of enabling wireless communication technologies, like RFID tags, BLE, ZigBee, embedded sensor and actuator nodes, and various protocols such as CoAP, MQTT and DNS, IoT has moved on from its infancy. Today smart sensors can collaborate directly with machines to automate decision-making or to control a task without human involvement. Further, smart technologies, including green electronics, green radios, fuzzy neural approaches, and intelligent signal processing techniques play an important role in the development of the wearable healthcare devices.

An introduction to a broad range of topics in deep learning, covering mathematical and

conceptual background, deep learning techniques used in industry, and research perspectives. “Written by three experts in the field, Deep Learning is the only comprehensive book on the subject.” —Elon Musk, cochair of OpenAI; cofounder and CEO of Tesla and SpaceX Deep learning is a form of machine learning that enables computers to learn from experience and understand the world in terms of a hierarchy of concepts. Because the computer gathers knowledge from experience, there is no need for a human computer operator to formally specify all the knowledge that the computer needs. The hierarchy of concepts allows the computer to learn complicated concepts by building them out of simpler ones; a graph of these hierarchies would be many layers deep. This book introduces a broad range of topics in deep learning. The text offers mathematical and conceptual background, covering relevant concepts in linear algebra, probability theory and information theory, numerical computation, and machine learning. It describes deep learning techniques used by practitioners in industry, including deep feedforward networks, regularization, optimization algorithms, convolutional networks, sequence modeling, and practical methodology; and it surveys such applications as natural language processing, speech recognition, computer vision, online recommendation systems, bioinformatics, and videogames. Finally, the book offers research perspectives, covering such theoretical topics as linear factor models, autoencoders, representation learning, structured probabilistic models, Monte Carlo methods, the partition function, approximate inference, and deep generative models.

Deep Learning can be used by undergraduate or graduate students planning careers in either industry or research, and by software engineers who want to begin using deep learning in their products or platforms. A website offers supplementary material for both readers and instructors.

If you know how to program, you have the skills to turn data into knowledge, using tools of probability and statistics. This concise introduction shows you how to perform statistical analysis computationally, rather than mathematically, with programs written in Python. By working with a single case study throughout this thoroughly revised book, you'll learn the entire process of exploratory data analysis—from collecting data and generating statistics to identifying patterns and testing hypotheses. You'll explore distributions, rules of probability, visualization, and many other tools and concepts. New chapters on regression, time series analysis, survival analysis, and analytic methods will enrich your discoveries. Develop an understanding of probability and statistics by writing and testing code Run experiments to test statistical behavior, such as generating samples from several distributions Use simulations to understand concepts that are hard to grasp mathematically Import data from most sources with Python, rather than rely on data that's cleaned and formatted for statistics tools Use statistical inference to answer questions about real-world data

The edited volume deals with different contours of data science with special reference to data management for the research innovation landscape. The data is becoming

pervasive in all spheres of human, economic and development activity. In this context, it is important to take stock of what is being done in the data management area and begin to prioritize, consider and formulate adoption of a formal data management system including citation protocols for use by research communities in different disciplines and also address various technical research issues. The volume, thus, focuses on some of these issues drawing typical examples from various domains. The idea of this work germinated from the two day workshop on “Big and Open Data – Evolving Data Science Standards and Citation Attribution Practices”, an international workshop, led by the ICSU-CODATA and attended by over 300 domain experts. The Workshop focused on two priority areas (i) Big and Open Data: Prioritizing, Addressing and Establishing Standards and Good Practices and (ii) Big and Open Data: Data Attribution and Citation Practices. This important international event was part of a worldwide initiative led by ICSU, and the CODATA-Data Citation Task Group. In all, there are 21 chapters (with 21st Chapter addressing four different core aspects) written by eminent researchers in the field which deal with key issues of S&T, institutional, financial, sustainability, legal, IPR, data protocols, community norms and others, that need attention related to data management practices and protocols, coordinate area activities, and promote common practices and standards of the research community globally. In addition to the aspects touched above, the national / international perspectives of data and its various contours have also been portrayed through case

studies in this volume.

A groundbreaking look at marriage, one of the most basic and universal of all human institutions, which reveals the emotional, physical, economic, and sexual benefits that marriage brings to individuals and society as a whole. The Case for Marriage is a critically important intervention in the national debate about the future of family. Based on the authoritative research of family sociologist Linda J. Waite, journalist Maggie Gallagher, and a number of other scholars, this book's findings dramatically contradict the anti-marriage myths that have become the common sense of most Americans. Today a broad consensus holds that marriage is a bad deal for women, that divorce is better for children when parents are unhappy, and that marriage is essentially a private choice, not a public institution. Waite and Gallagher flatly contradict these assumptions, arguing instead that by a broad range of indices, marriage is actually better for you than being single or divorced– physically, materially, and spiritually. They contend that married people live longer, have better health, earn more money, accumulate more wealth, feel more fulfillment in their lives, enjoy more satisfying sexual relationships, and have happier and more successful children than those who remain single, cohabit, or get divorced. The Case for Marriage combines clearheaded analysis, penetrating cultural criticism, and practical advice for strengthening the institution of marriage, and provides clear, essential guidelines for reestablishing marriage as the foundation for a healthy and happy society. "A compelling defense of a sacred union. The Case for

Marriage is well written and well argued, empirically rigorous and learned, practical and commonsensical." -- William J. Bennett, author of The Book of Virtues "Makes the absolutely critical point that marriage has been misrepresented and misunderstood." -- The Wall Street Journal www.broadwaybooks.com

Build smart applications by implementing real-world artificial intelligence projects Key Features Explore a variety of AI projects with Python Get well-versed with different types of neural networks and popular deep learning algorithms Leverage popular Python deep learning libraries for your AI projects Book Description Artificial Intelligence (AI) is the newest technology that's being employed among varied businesses, industries, and sectors. Python Artificial Intelligence Projects for Beginners demonstrates AI projects in Python, covering modern techniques that make up the world of Artificial Intelligence. This book begins with helping you to build your first prediction model using the popular Python library, scikit-learn. You will understand how to build a classifier using an effective machine learning technique, random forest, and decision trees. With exciting projects on predicting bird species, analyzing student performance data, song genre identification, and spam detection, you will learn the fundamentals and various algorithms and techniques that foster the development of these smart applications. In the concluding chapters, you will also understand deep learning and neural network mechanisms through these projects with the help of the Keras library. By the end of this book, you will be confident in building your own AI

projects with Python and be ready to take on more advanced projects as you progress What you will learn Build a prediction model using decision trees and random forest Use neural networks, decision trees, and random forests for classification Detect YouTube comment spam with a bag-of-words and random forests Identify handwritten mathematical symbols with convolutional neural networks Revise the bird species identifier to use images Learn to detect positive and negative sentiment in user reviews Who this book is for Python Artificial Intelligence Projects for Beginners is for Python developers who want to take their first step into the world of Artificial Intelligence using easy-to-follow projects. Basic working knowledge of Python programming is expected so that you’re able to play around with code

Deciding when and how to retire are among the most important decisions most people make. Can they be depended on to plan with foresight and make sound decisions? According to standard economic analysis the answer is a qualified "yes." But studies by psychologists, sociologists, and economists themselves raise doubts about this comforting appraisal. This volume by analysts trained in economics and other disciplines suggests that retirement planning and decisions fall far short of the rational ideal. Gary Burtless explains what economic research has to say about retirement behavior. Annamaria Lusardi reports that many people in their fifties and older say they have not even thought about retirement. Mathey Rabin and Ted O'Donoghue show that procrastination can cause huge economic losses. Robert Axtell and Joshua Epstein

show that herd behavior explains observed patterns of retirement behavior better than does the assumption of rational decisionmaking. George Loewenstein, Drazen Prelec, and Roberto Weber report that many people incorrectly anticipate what retirement will be like and rationalize whatever decision they have made. David Fetherstonhaugh and Lee Ross report experimental evidence that the effect of Social Security provisions may depend on how these policies are "framed" as well as on the specific content of those policies. These and other authors also explore the broader implications of these behavioral patterns. Copublished with Russell Sage Foundation

This three-book set constitutes the refereed proceedings of the Second International Conference on Recent Trends in Image Processing and Pattern Recognition (RTIP2R) 2018, held in Solapur, India, in December 2018. The 173 revised full papers presented were carefully reviewed and selected from 374 submissions. The papers are organized in topical sections in the tree volumes. Part I: computer vision and pattern recognition; machine learning and applications; and image processing. Part II: healthcare and medical imaging; biometrics and applications. Part III: document image analysis; image analysis in agriculture; and data mining, information retrieval and applications.

The two volume set CCIS 1030 and 1031 constitutes the refereed proceedings of the Second International Conference on Computational Intelligence, Communications, and Business Analytics, CICBA 2018, held in Kalyani, India, in July 2018. The 76 revised full papers presented in the two volumes were carefully reviewed and selected from 240

submissions. The papers are organized in topical sections on computational intelligence; signal processing and communications; microelectronics, sensors, and intelligent networks; data science & advanced data analytics; intelligent data mining & data warehousing; and computational forensics (privacy and security).

The bold futurist and bestselling author of The Singularity is Nearer explores the limitless potential of reverse-engineering the human brain Ray Kurzweil is arguably today's most influential—and often controversial—futurist. In How to Create a Mind, Kurzweil presents a provocative exploration of the most important project in human-machine civilization—reverse engineering the brain to understand precisely how it works and using that knowledge to create even more intelligent machines. Kurzweil discusses how the brain functions, how the mind emerges from the brain, and the implications of vastly increasing the powers of our intelligence in addressing the world's problems. He thoughtfully examines emotional and moral intelligence and the origins of consciousness and envisions the radical possibilities of our merging with the intelligent technology we are creating. Certain to be one of the most widely discussed and debated science books of the year, How to Create a Mind is sure to take its place alongside Kurzweil's previous classics which include Fantastic Voyage: Live Long Enough to Live Forever and The Age of Spiritual Machines.

Delve into neural networks, implement deep learning algorithms, and explore layers of data abstraction with the help of this comprehensive TensorFlow guide

About This Book Learn how to implement advanced techniques in deep learning with Google's brainchild, TensorFlow Explore deep neural networks and layers of data abstraction with the help of this comprehensive guide Real-world contextualization through some deep learning problems concerning research and application Who This Book Is For The book is intended for a general audience of people interested in machine learning and machine intelligence. A rudimentary level of programming in one language is assumed, as is a basic familiarity with computer science techniques and technologies, including a basic awareness of computer hardware and algorithms. Some competence in mathematics is needed to the level of elementary linear algebra and calculus. What You Will Learn Learn about machine learning landscapes along with the historical development and progress of deep learning Learn about deep machine intelligence and GPU computing with the latest TensorFlow 1.x Access public datasets and utilize them using TensorFlow to load, process, and transform data Use TensorFlow on real-world datasets, including images, text, and more Learn how to evaluate the performance of your deep learning models Using deep learning for scalable object detection and mobile computing Train machines quickly to learn from data by exploring reinforcement learning techniques Explore active areas of deep learning research and applications In Detail Deep learning is the step that comes

after machine learning, and has more advanced implementations. Machine learning is not just for academics anymore, but is becoming a mainstream practice through wide adoption, and deep learning has taken the front seat. As a data scientist, if you want to explore data abstraction layers, this book will be your guide. This book shows how this can be exploited in the real world with complex raw data using TensorFlow 1.x. Throughout the book, you'll learn how to implement deep learning algorithms for machine learning systems and integrate them into your product offerings, including search, image recognition, and language processing. Additionally, you'll learn how to analyze and improve the performance of deep learning models. This can be done by comparing algorithms against benchmarks, along with machine intelligence, to learn from the information and determine ideal behaviors within a specific context. After finishing the book, you will be familiar with machine learning techniques, in particular the use of TensorFlow for deep learning, and will be ready to apply your knowledge to research or commercial projects. Style and approach This step-by-step guide will explore common, and not so common, deep neural networks and show how these can be exploited in the real world with complex raw data. With the help of practical examples, you will learn how to implement different types of neural nets to build smart applications related to text, speech, and image data processing.

This volume constitutes the refereed proceedings of the Second International Conference on Agreement Technologies, AT 2013, held in Beijing, China, in August 2013. The 15 revised full papers presented together with two invited talks were carefully reviewed and selected from numerous submissions and focus on topics such as semantic technologies, normative multiagent systems, virtual organisations and electronic institutions, argumentation and negotiation, trust and reputation, applications of agreement technologies, agreement technologies architectures, environments and methodologies, as well as interdisciplinary foundations of agreement technologies.

This is the first textbook on pattern recognition to present the Bayesian viewpoint. The book presents approximate inference algorithms that permit fast approximate answers in situations where exact answers are not feasible. It uses graphical models to describe probability distributions when no other books apply graphical models to machine learning. No previous knowledge of pattern recognition or machine learning concepts is assumed. Familiarity with multivariate calculus and basic linear algebra is required, and some experience in the use of probabilities would be helpful though not essential as the book includes a self-contained introduction to basic probability theory.

'if AI is outside your field, or you know something of the subject and would like to

know more then Artificial Intelligence: The Basics is a brilliant primer.' - Nick Smith, Engineering and Technology Magazine November 2011 Artificial Intelligence: The Basics is a concise and cutting-edge introduction to the fast moving world of AI. The author Kevin Warwick, a pioneer in the field, examines issues of what it means to be man or machine and looks at advances in robotics which have blurred the boundaries. Topics covered include: how intelligence can be defined whether machines can 'think' sensory input in machine systems the nature of consciousness the controversial culturing of human neurons. Exploring issues at the heart of the subject, this book is suitable for anyone interested in AI, and provides an illuminating and accessible introduction to this fascinating subject.

This book constitutes the refereed proceedings of the First Workshop on Self-sustaining Systems, S3, held in Potsdam, Germany, in May 2008. S3 is a forum for discussion of topics relating to computer systems and languages that are able to bootstrap, implement, modify, and maintain themselves. One property of these systems is that their implementation is based on small but powerful abstractions; examples include (amongst others) Squeak/Smalltalk, COLA, Klein/Self, PyPy/Python, Rubinius/Ruby, and Lisp. Such systems are the engines of their own replacement, giving researchers and developers great power to experiment

with, and explore future directions from within their own small language kernels.
Artificial IntelligenceTechnical PublicationsArtificial Intelligence and Evolutionary Computations in Engineering SystemsSpringer Nature
Build next-generation Artificial Intelligence systems with Java Key Features Implement AI techniques to build smart applications using Deeplearning4j Perform big data analytics to derive quality insights using Spark MLlib Create self-learning systems using neural networks, NLP, and reinforcement learning Book Description In this age of big data, companies have larger amount of consumer data than ever before, far more than what the current technologies can ever hope to keep up with. However, Artificial Intelligence closes the gap by moving past human limitations in order to analyze data. With the help of Artificial Intelligence for big data, you will learn to use Machine Learning algorithms such as k-means, SVM, RBF, and regression to perform advanced data analysis. You will understand the current status of Machine and Deep Learning techniques to work on Genetic and Neuro-Fuzzy algorithms. In addition, you will explore how to develop Artificial Intelligence algorithms to learn from data, why they are necessary, and how they can help solve real-world problems. By the end of this book, you'll have learned how to implement various Artificial Intelligence algorithms for your big data systems and integrate them into your product

offerings such as reinforcement learning, natural language processing, image recognition, genetic algorithms, and fuzzy logic systems. What you will learn Manage Artificial Intelligence techniques for big data with Java Build smart systems to analyze data for enhanced customer experience Learn to use Artificial Intelligence frameworks for big data Understand complex problems with algorithms and Neuro-Fuzzy systems Design stratagems to leverage data using Machine Learning process Apply Deep Learning techniques to prepare data for modeling Construct models that learn from data using open source tools Analyze big data problems using scalable Machine Learning algorithms Who this book is for This book is for you if you are a data scientist, big data professional, or novice who has basic knowledge of big data and wish to get proficiency in Artificial Intelligence techniques for big data. Some competence in mathematics is an added advantage in the field of elementary linear algebra and calculus.

Nano drug-delivery systems responding to cellular local stimuli, such as pH, temperature and reductive agent's activation, i.e. enzymes, could effectively provide passive-mode desirable release but fail in disease treatment following the biological rhythms of brain tumor. This book is a compilation of research development lead by expert researchers and it establishes a single reference module. It addresses, for the first time, all translational aspects and clinical

perspectives of physically stimulated breast-cancer nanotheranostics from a wide-ranging and multidisciplinary perception providing unrivalled and comprehensive knowledge in the field.

This book gathers selected papers presented at the 4th International Conference on Artificial Intelligence and Evolutionary Computations in Engineering Systems, held at the SRM Institute of Science and Technology, Kattankulathur, Chennai, India, from 11 to 13 April 2019. It covers advances and recent developments in various computational intelligence techniques, with an emphasis on the design of communication systems. In addition, it shares valuable insights into advanced computational methodologies such as neural networks, fuzzy systems, evolutionary algorithms, hybrid intelligent systems, uncertain reasoning techniques, and other machine learning methods and their application to decision-making and problem-solving in mobile and wireless communication networks.

This book, divided in two volumes, originates from Techno-Societal 2020: the 3rd International Conference on Advanced Technologies for Societal Applications, Maharashtra, India, that brings together faculty members of various engineering colleges to solve Indian regional relevant problems under the guidance of eminent researchers from various reputed organizations. The focus of this volume is on technologies that help develop and improve society, in particular on issues such as sensor and ICT based technologies for the betterment of people, Technologies for agriculture and healthcare, micro and nano technological applications. This conference aims to help innovators to share their best practices or products developed to solve specific local problems which in turn may help the other researchers to take

inspiration to solve problems in their region. On the other hand, technologies proposed by expert researchers may find applications in different regions. This offers a multidisciplinary platform for researchers from a broad range of disciplines of Science, Engineering and Technology for reporting innovations at different levels.

Binary Polar Liquids: Structural and Dynamic Characterization Using Spectroscopic Methods provides liquid state physical chemists and physicists with practical theoretical models based on a wealth of robust data that describe the dielectric properties of dipolar materials in a systematic manner. In many applications, reference measurements using dielectric permittivity data are required. Over the past three decades, the author has compiled and analyzed permittivity research data and relaxation times for various polar liquids and their mixtures. The resulting structural data - as determined from various models - is critically evaluated, arming scientists with a complete characterization of the spectra of water-containing mixtures. Includes theoretical models that describe dielectric properties of dipolar materials Features reference measurements using dielectric permittivity data Describes the experimental techniques and procedures to extract the permittivity spectra and determination of different molecular parameters Provides a critical evaluation and analysis of research data compiled and consolidated over more than 30 years

This book explores various challenging problems and applications areas of wireless sensor networks (WSNs), and identifies the current issues and future research challenges. Discussing the latest developments and advances, it covers all aspects of in WSNs, from architecture to protocols design, and from algorithm development to synchronization issues. As such the book is an essential reference resource for undergraduate and postgraduate students as well as

scholars and academics working in the field.