The Science Of Sound 2002 Thomas D Rossing Paul A

A professor of acoustic engineering provides a tour of the world's most amazing sound phenomena, including creaking glaciers, whispering galleries, stalactite organs, musical roads, humming dunes, seals that sound like alien angels, and a Mayan pyramid tha bird.

Maintaining the excellent pedagogical features that made the previous editions highly lauded as well as keeping abreast of the latest research developments with the inclusion of new topics, the extensively updated Third Edition of a standard text provides the anatomy, physiology, psychology, and function of audition-ideal for hearing science courses concerned with psychological and/or physiological acoustics. Features numerous new and revised drawings, tables, and photographs-improving students' compreh material! Proceeding from anatomy and physiology to psychoacoustics and speech perception-detailing the relationship between the auditory system's structure and function and the perception of sound-this practical volume unites classical concepts and cu presenting an integrated view of auditory research furnishes classroom-tested material-organizing topics to meet both students' and instructors' needs defines all necessary mathematical work and physical concepts-facilitating understanding of acoustical r requiring a background in mathematics supplies over 1440 references-offering helpful information for further study and much more! Hearing, Third Edition is a valuable resource for graduate-level students in speech and hearing science, audiology, speech-lan psychology, otolaryngology, neurology, communications engineering, and acoustics, as well as practicing professionals and upper-level undergraduate and graduate students who want a timely overview of the field.

An investigation into how specific Web technologies can change the dynamics oforganizing and participating in political and social protest.

Virtual environments such as games and animated and "real" movies require realistic sound effects that can be integrated by computer synthesis. The book emphasizes physical modeling of sound and focuses on real-world interactive sound effects. It is inte developers, graphics programmers, developers of virtual reality systems and traini

Holt Science and Technology 2002

Handbook on Applications of Ultrasound

Listening to American Studies

Designing Sound for Animation

Sonochemistry for Sustainability

Architectural Acoustics and the Culture of Listening in America, 1900-1933

Watermarking techniques involve the concealment of information withina text or images and the transmission of this information to thereceiver with minimum distortion. This is a very new area ofresearch. The techniques will have a significant effect on defence, business, copyright protection and other fields where informationneeds to be protected at all costs from attackers.This book presents the recent advances in the theory andimplementation of watermarking techniques. It brings together, for thefirst time, the successful applications of intelligent paradigms(including comparisons with conventional methods) in many areas. Theaccompanying CD-Rom provides readers with source codes and executablesto put into practice general topics in watermarking

Describes the principles of sound and how it is a part of daily life.

"This book is aimed at researchers and practitioners involved in designing and managing complex multimedia information systems"--Provided by publisher.

Written for students without a background in mathematics or physics, this textbook provides an introduction to the study of acoustics. It covers: vibrations, waves, and sound; perception and the measurement of sound; musical instruments; the human voice; electroacoustics; the acoustics of rooms; electronic music technology; and, environmental noise. Diagrams, charts, and photographs are featured. The authors teach at American universities. Annotation copyrighted by Book News Inc., Portland, OR.

Physics abstracts

The Ontological Choreography of Reproductive Technologies

Hearing

Real Sound Synthesis for Interactive Applications

The Science of Musical Sound

How Music and Speech Unlock Mysteries of the Brain

Bob Katz explains audio concepts in a simple, holistic manner in this guide to producing a compact disc from scratch. With the advent of cheap computers many amateurs are interested in learning this skill but the book will also interest professionals for its many useful tips and hints.

In this ground-breaking synthesis of art and science, Diana Deutsch, one of the world's leading experts on the psychology of music, shows how illusions of music and speech--many of which she herself discovered--have fundamentally altered thinking about the brain. These astonishing illusions show that people can differ strikingly in how they hear musical patterns--differences that reflect variations in brain organization as well as influences of language on music perception. Drawing on a wide variety of fields, including psychology, music theory, linguistics, and neuroscience, Deutsch examines questions such as: When an orchestra performs a symphony, what is the "real" music? Is it in the mind of the composer, or the conductor, or different members of the audience? Deutsch also explores extremes of musical ability, and other surprising responses to music and speech. Why is perfect pitch so rare? Why do some people hallucinate music or speech? Why do we hear phantom words and phrases? Why are we subject to stuck tunes, or "earworms"? Why do we hear a spoken phrase as sung just because it is presented repeatedly? In evaluating these questions, she also shows how music and speech are intertwined, and argues that they stem from an early form of communication that had elements of both. Many of the illusions described in the book are so striking and paradoxical that you need to hear them to believe them. The book enables you to listen to the sounds that are described while reading about them.

The field of Sound Studies has changed and developed dramatically over the last two decades involving a vast and dizzying array of work produced by those working in the arts, social sciences and sciences. The study of sound is inherently interdisciplinary and is undertaken both by those who specialize in sound and by others who wish to include sound as an intrinsic and indispensable element in their research. This is the first resource to provide a wide ranging, cross-cultural and interdisciplinary investigation and analysis of the ways in which researchers use a broad range of methodologies in order to pursue their sonic investigations. It brings together 49 specially commissioned chapters that ask a wide range of questions including; how can sound be used in current academic disciplines? Is sound as a methodological tool indispensable for Sound Studies and what can sound artists contribute to the discourse on methodology in Sound Studies? The editors also present 3 original chapters that work as provocative 'sonic methodological interventions' prefacing the 3 sections of the book.

A uniquely engaging description of the mechanics of the guitar, for engineers and craftsmen alike. Clearly written in a conceptual language, it provides readers with an understanding of the dynamic behavior of the instrument, including structural and component dynamics, and various analytical models, such as discrete, finite element, and boundary element models. The text also covers manufacturing processes, including both handmade and mass produced instruments.

Foundations of Machine Learning, second edition

Engineering the Guitar

Creative Strategies for Teaching and Learning

Sound Science For Endangered Species Act Planning Act Of 2002... Report 107-751... House Of Representatives... 107th Congress, 2nd Session

Loud, Soft, High, and Low

Digital Signatures

Science of Percussion InstrumentsWorld Scientific Publishing Company

Reproductive technologies, says Thompson, are part of the increasing tendency to turn social problems into biomedical questions and can be used as a lens to see the resulting changes in the relations between science and society."--BOOK JACKET.

Race, sex, and gender.

The Handbook of Speech Perception is a collection of forward-looking articles that offer a summary of the technical and theoretical accomplishments in this vital area of research on language. Now available in paperback, this uniquely comprehensive companion brings together in one volume the latest research conducted in speech perception Contains original contributions by leading researchers in the field Illustrates technical and theoretical accomplishments and challenges across the field of research and language Adds to a growing understanding of the far-reaching relevance of speech perception in the fields of phonetics, audiology and speech science, cognitive science, experimental psychology, behavioral neuroscience, computer science, and electrical engineering, among others.

Digitally Enabled Social Change

Mastering Audio

The Art and the Science

Sensation and Perception

A Sourcebook for Teachers of Physics

Sound and Light

Sensation and Perception, Fifth Edition maintains the standard of clarity and coverage set in earlier editions, which make the technical scientific information accessible to a wide range of students. The authors have received national awards for their teaching and are fully responsible for the content and organization of the text. As a result, it features strong pedagogy, abundant student-friendly examples, and an engaging conversational style.

Brimming with more than more than 1700 references, this reader-friendly and extensively revised Fourth Edition will prove invaluable to instructors and students alike-providing a unified approach to the anatomical, physiological, and perceptual aspects of audition with updated chapters on the latest developments in the field.

Ultrasonic irradiation and the associated sonochemical and sonophysical effects are complementary techniques for driving more efficient chemical reactions and yields. Sonochemistry—the chemical effects and applications of ultrasonic waves—and sustainable (green) chemistry both aim to use less hazardous chemicals and solvents, reduce energy consumption, and increase product selectivity. A comprehensive collection of knowledge, Handbook on Applications of Ultrasound covers the most relevant aspects linked to and linking green chemistry practices to environmental sustainability through the uses and applications of ultrasound-mediated and ultrasound-assisted biological, biochemical, chemical, and physical processes. Chapters are presented in the areas of: Medical applications Drug and gene delivery Nanotechnology Food technology Synthetic applications and organic chemistry Anaerobic digestion Environmental contaminants degradation Polymer chemistry Industrial syntheses and processes Reactor design Electrochemical systems Combined ultrasound—microwave technologies While the concepts of sonochemistry have been known for more than 80 years, in-depth understanding of this phenomenon continues to evolve. Through a review of the current status of chemical and physical science and engineering in developing more environmentally friendly and less toxic synthetic processes, this book highlights many existing applications and the enormous potential of ultrasound technology to upgrade present industrial, agricultural, and environmental processes.

The Science of Sound is widely recognized as the leading textbook in the field. It provides an excellent introduction to acoustics for students without college physics or a strong background in mathematics. In the Third Edition, Richard Moore and Paul Wheeler join Tom Rossing in updating The Science of Sound to include a wide range of important technological developments in the field of acoustics. New exercises and review questions have been added to the end of each chapter to help students study the material.

Sound Clash

Springer Handbook of Systematic Musicology

Physics Demonstrations

Intelligent Watermarking Techniques

Sound Design and Science Fiction

The Routledge Companion to Music Cognition

A vibrant history of acoustical technology and aural culture in early-twentieth-century America. In this history of aural culture in early-twentieth-century America, Emily Thompson charts dramatic transformations in what people heard and how they listened. What they heard was a new kind of sound that was the product of modern technology. They listened as newly critical consumers of aural commodities. By examining the technologies that produced this sound, as well as the culture that enthusiastically consumed it, Thompson recovers a lost dimension of the Machine Age and deepens our understanding of the experience of change that characterized the era. Reverberation equations, sound meters, microphones, and acoustical tiles were deployed in places as varied as Boston's Symphony Hall, New York's office skyscrapers, and the soundstages of Hollywood. The control provided by these technologies, however, was applied in ways that denied the particularity of place, and the diverse spaces of modern America began to sound alike as a universal new sound predominated. Although this sound—clear, direct, efficient, and nonreverberant—had little to say about the physical spaces in which it was produced, it speaks volumes about the culture that created it. By listening to it, Thompson constructs a compelling new account of the experience of modernity in America.

Percussion instruments may be our oldest musical instruments, but only recently have they become the subject of extensive scientific study. This book focuses on how percussion instruments vibrate and produce sound and how these sounds are perceived by listeners.

An introduction to the field of applied ontology with examples derived particularly from biomedicine, covering theoretical components, design practices, and practical applications. In the era of "big data," science is increasingly information driven, and the potential for computers to store, manage, and integrate massive amounts of data has given rise to such new disciplinary fields as biomedical informatics. Applied ontology offers a strategy for the organization of scientific information in computer-tractable form, drawing on concepts not only from computer and information science but also from linguistics, logic, and philosophy. This book provides an introduction to the field of applied ontology that is of particular relevance to biomedicine, covering theoretical components of ontologies, best practices for ontology design, and examples of biomedical ontologies in use. After defining an ontology as a representation of the types of entities in a given domain, the book distinguishes between different kinds of ontologies and taxonomies, and shows how applied ontology draws on more traditional ideas from metaphysics. It presents the core features of the Basic Formal Ontology (BFO), now used by over one hundred ontology projects around the world, and offers examples of domain ontologies that utilize BFO. The book also describes Web Ontology Language (OWL), a common framework for Semantic Web technologies. Throughout, the book provides concrete recommendations for the design and construction of domain ontologies.

This textbook is a product of William Bennett's work in developing and teaching a course on the physics of music at Yale University to a diverse audience of musicians and science students in the same class. The book is a culmination of over a decade of teaching the course and weaves together historical descriptions of the physical phenomena with the author's clear interpretations of the most important aspects of the science of music and musical instruments. Many of the historical examples are not found in any other textbook available on the market. As the co-inventor of the Helium-Neon laser, Prof. Bennett's knowledge of physics was world-class. As a professor at one of the most prestigious liberal-arts universities in the world, his appreciation for culture and humanities shines through. The book covers the basics of oscillations, waves and the analysis techniques necessary for understanding how musical instruments work. All types of stringed instruments, pipe organs, and the human voice are covered in this volume. A second volume covers the remaining families of musical instruments as well as selected other topics. Readers without a background in acoustics will enjoy learning the physics of the Science of Musical Sound from a preeminent scientist of the 20th century. Those well versed in acoustics will discover wonderful illustrations and photographs depicting familiar concepts in new and enlightening ways.

Managing Multimedia Semantics

Music as Biology

Volume 1: Stringed Instruments, Pipe Organs, and the Human Voice

The Science and Psychology of Music Performance

The Sound Book: The Science of the Sonic Wonders of the World

An Introduction to Psychological and Physiological Acoustics, Fourth Edition

Sprott's demonstrations will fascinate, amaze, and teach students the wonders of physics. A compilation of physics demonstrations performed at the University of Wisconsin–Madison and in the popular lecture series The Wonders of Physics, Physics Demonstrations includes demonstrations illustrating properties of motion, heat, sound, electricity, magnetism, and light. All demonstrations include a brief description, a materials list, preparation procedures, a provocative discussion of the phenomena displayed and the principles illustrated, important information about potential hazards, and references. Suitable for performance outside the laboratory, Sprott's demonstrations are an indispensable teaching tool.

A wide-ranging and authoritative volume exploring contemporary perceptual research on speech, updated with new original essays by leading researchers Speech perception is a dynamic area of study that encompasses a wide variety of disciplines, including cognitive neuroscience, phonetics, linguistics, physiology and biophysics, auditory and speech science, and experimental psychology. The Handbook of Speech Perception, Second Edition, is a comprehensive and up-to-date survey of technical and theoretical developments in perceptual research on human speech. Offering a variety of perspectives on the perception of spoken language, this volume provides original essays by leading researchers on the major issues and most recent findings in the field. Each chapter provides an informed and critical survey, including a summary of current research and debate, clear examples and research findings, and discussion of anticipated advances and potential research directions. The timely second edition of this valuable resource: Discusses a uniquely broad range of both foundational and emerging issues in the field Surveys the major areas of the field of human speech perception Features newly commissioned essays on the relation between speech perception and reading, features in speech perception and lexical access, perceptual identification of individual talkers, and perceptual learning of accented speech Includes essential revisions of many chapters original to the first edition Offers critical introductions to recent research literature and leading field developments Encourages the development of multidisciplinary research on speech perception Provides readers with clear understanding of the aims, methods, challenges, and prospects for advances in the field The Handbook of Speech Perception, Second Edition, is ideal for both specialists and non-specialists throughout the research community looking for a comprehensive view of the latest technical and theoretical accomplishments in the field

Maintaining the strong pedagogy, abundant student-friendly examples, and engaging conversational style of the previous editions, the sixth edition of this introductory textbook makes technical scientific information accessible to those who are beginning to specialize in cognitive psychology. Sensation and Perception, Sixth Edition is newly available in a more affordable paperback version, making it ideal for undergraduate students. In this new edition Bates has built on Foley and Matlin's score text to add updates focusing on multisensory integration, neural plasticity, and cognitive neuroscience, as well as real-world examples and practical applications of psychological phenomena. The sixth edition retains the clear organization of previous versions, covering a wide range of core topics, from skin senses such as touch to chemical senses such as taste and smell, to our complex visual and auditory sensory systems. This book is essential reading for undergraduates and postgraduates studying courses on sensation and perception.

How sonically distinctive digital "signatures"—including reverb, glitches, and autotuning—affect the aesthetics of popular music, analyzed in works by Prince, Lady Gaga, and others. Is digital production killing the soul of music? Is Auto-Tune the nadir of creative expression? Digital technology has changed not only how music is produced, distributed, and consumed but also—equally important but not often considered—how music sounds. In this book, Ragnhild Brøvig-Hansen and Anne Danielsen examine the impact of digitization on the aesthetics of popular music. They investigate sonically distinctive "digital signatures"—musical moments when the use of digital technology is revealed to the listener. The particular signatures of digital mediation they examine include digital reverb and delay, MIDI and sampling, digital silence, the virtual cut-and-paste tool, digital glitches, microrhythmic manipulation, and autotuning—all of which analyze in specific works by popular artists. Combining technical and historical knowledge of music production with musical analyses, aesthetic interpretations, and theoretical discussions, Brøvig-Hansen and Danielsen offer unique insights into how digitization has changed the sound of popular music and the listener's experience of it. For example, they show how digital reverb and delay have allowed experimentation with spatiality by analyzing Kate Bush's "Get Out of My House"; they examine the contrast between digital silence and the low-tech noises of tape hiss or vinyl crackle in Portishead's "Stranger"; and they describe the development of Auto-Tune—at first a tool

for pitch correction—into an artistic effect, citing work by various hip-hop artists, Bon Iver, and Lady Gaga.

Building Ontologies with Basic Formal Ontology

The Soundscape of Modernity

The Science of Sound

Musical Illusions and Phantom Words

The Bloomsbury Handbook of Sonic Methodologies

The Oxford Handbook of Sound Studies

This nuts-and-bolts guide to sound design for animated films explains audio software, free downloads, how sound works, the power of sound when wielded by an animation filmmaker, and provides varieties of examples for how to use sound to enliven your films with professional sound. Sound-savvy animators save precious resources (time and money) by using sound for effects they don't necessarily have time to create. For example, the sound of a crow flying gives viewers a sense of the crow without the crow. Where there's a macabre element or scene in an animated film, this book explains why you should choose a low frequency sound for it-low frequencies are scary, because the ear can't decipher their origin or direction! On the DVD: three 5-minute animations; sample sound clips, jump cuts and video streams; plus motion graphics with which to practice sound-applications explained in this book.

Introduces the science of sounds, including volume, pitch, echoes, and eardrums, along with hands-on activities to demonstrate concepts.

Why do human beings find some tone combinations consonant and others dissonant? Why do we make music using only a small number of scales out the billions that are possible? Dale Purves shows that rethinking music theory in biological terms offers a new approach to centuries-long debates about the organization and impact of music.

This unique reference book offers a holistic description of the multifaceted field of systematic musicology, which is the study of music, its production and perception, and its cultural, historical and philosophical background. The seven sections reflect the main topics in this interdisciplinary subject. The first two parts discuss musical acoustics and signal processing, comprehensively describing the mathematical and physical fundamentals of musical sound generation and propagation. The complex interplay of physiology and psychology involved in sound and music perception is covered in the following sections, with a particular focus on psychoacoustics and the recently evolved research on embodied music cognition. In addition, a huge variety of technical applications for professional training, music composition and consumer electronics are presented. A section on music ethnology completes this comprehensive handbook. Music theory and philosophy of music are imbedded throughout. Carefully edited and written by internationally respected experts, it is an invaluable reference resource for professionals and graduate students alike.

Science of Percussion Instruments

Activism in the Internet Age

Springer Handbook of Acoustics

Sound

The Impact of Digitization on Popular Music Sound

What type of practice makes a musician perfect? What sort of child is most likely to succeed on a musical instrument? What practice strategies yield the fastest improvement in skills such as sight-reading, memorization, and intonation? Scientific and psychological research can offer answers to these and other questions that musicians face every day. In The Science and Psychology of Music Performance, Richard Parncutt and Gary McPherson assemble relevant current research findings and make them accessible to musicians and music educators. This book describes new approaches to teaching music, learning music, and making music at all educational and skill levels. Each chapter represents the collaboration between a music researcher (usually a music psychologist) and a performer or music educator. This combination of expertise results in excellent practical advice. Readers will learn, for example, that they are in the majority (57%) if they experience rapid heartbeat before performances; the chapter devoted to performance anxiety will help them decide whether beta-blocker medication, hypnotherapy, or the Alexander Technique of relaxation might alleviate their stage fright. Another chapter outlines a step-by-step method for introducing children to musical notation, firmly based on research in cognitive development. Altogether, the 21 chapters cover the personal, environmental, and acoustical influences that shape the learning and performance of music.

Written by the world's leading scholars and researchers in the emerging field of sound studies, The Oxford Handbook of Sound Studies offers new and fully engaging perspectives on the significance of sound in its material and cultural forms. The book considers sounds and music as experienced in such diverse settings as shop floors, laboratories, clinics, design studios, homes, and clubs, across an impressively broad range of historical periods and national and cultural contexts.Science has traditionally been understood as a visual matter, a study which has historically been undertaken with optical technologies such as slides, graphs, and telescopes. This book questions that notion powerfully by showing how listening has contributed to scientific practice. Sounds have always been a part of human experience, shaping and transforming the world in which we live in ways that often go unnoticed. Sounds and music, the authors argue, are embedded in the fabric of everyday life, art, commerce, and politics in ways which impact our perception of the world. Through an extraordinarily diverse set of case studies, authors illustrate how sounds -- from the sounds of industrialization, to the sounds of automobiles, to sounds in underwater music and hip-hop, to the sounds of nanotechnology -- give rise to new forms listening practices. In addition, the book discusses the rise of new public problems such as noise pollution, hearing loss, and the "end" of the amateur musician that stem from the spread and appropriation of new sound- and music-related technologies, analog and digital, in many domains of life.Rich in vivid and detailed examples and compelling case studies, and featuring a companion website of listening samples, this remarkable volume boldly challenges readers to rethink the way they hear and understand the world.

The Routledge Companion to Music Cognition addresses fundamental questions about the nature of music from a psychological perspective. Music cognition is presented as the field that investigates the psychological, physiological, and physical processes that allow music to take place, seeking to explain how and why music has such powerful and mysterious effects on us. This volume provides a comprehensive overview of research in music cognition, balancing accessibility with depth and sophistication. A diverse range of global scholars--music theorists, musicologists, pedagogues, neuroscientists, and psychologists--address the implications of music in everyday life while broadening the range of topics in music cognition research, deliberately seeking connections with the kinds of music and musical experiences that are meaningful to the population at large but are often overlooked in the study of music cognition. Such topics include: Music's impact on physical and emotional health Music cognition in various genres Music cognition in diverse populations, including people with amusia and hearing impairment The relationship of music to learning and accomplishment in academics, sport, and recreation The broader sociological and anthropological uses of music Consisting of over forty essays, the volume is organized by five primary themes. The first section, "Music from the Air to the Brain," provides a neuroscientific and theoretical basis for the book. The next three sections are based on musical actions: "Hearing and Listening to Music," "Making and Using Music," and "Developing Musicality." The closing section, "Musical Meanings," returns to fundamental questions related to music's meaning and significance, seen from historical and contemporary perspectives. The Routledge Companion to Music Cognition seeks to encourage readers to understand connections between the laboratory and the everyday in their musical lives.

Acoustics, the science of sound, has developed into a broad interdisciplinary field encompassing the academic disciplines of physics, engineering, psychology, speech, audiology, music, architecture, physiology, neuroscience and others. Here is an unparalleled modern handbook reflecting this richly interdisciplinary nature edited by one of the acknowledged masters in the field, Thomas Rossing. Researchers and students benefit from the comprehensive contents spanning: animal acoustics including infrasound and ultrasound, environmental noise control, music and human speech and singing, physiological and psychological acoustics, architectural acoustics, physical and engineering acoustics, medical acoustics and ocean acoustics. The Springer Handbook of Acoustics reviews the most important areas of acoustics, with emphasis on current research. The authors of the various chapters are all experts in their fields. Each chapter is richly illustrated with figures and tables. The latest research and applications are incorporated throughout, e.g. computer recognition and synthesis of speech, physiological acoustics, psychological acoustics, thermoacoustics, diagnostic imaging and therapeutic applications and acoustical oceanography. This new edition of the Handbook features over 11 revised and expanded chapters, new illustrations and two new chapters covering microphone arrays, acoustic metamaterials and acoustic emission. These improvements will make the handbook even more useful as a reference and a guide for researchers and students in every branch of acoustics. Praise for the first edition: "This treatise is a successful attempt to cover in one book the diverse field of acoustics, which ranges from physics to music and from formal mathematics to technological applications. ... It is this reviewer's opinion that a handbook like Rossing's, which covers the whole field of acoustics, serves a real purpose because it not only gives one a chance to see how one's specialty is covered but it also permits one to make a quick survey of other acoustical areas." (Leo Beranek, American Journal of Physics, Vol. 77 (12), December, 2009) "The Springer Handbook of Acoustics falls into that exceptional list. ...every physics department should have a copy available." (John L. Hubisz, The Physics Teacher, Vol. 48, March, 2010) "This handbook is an excellent addition to the acoustics literature. ... The handbook nicely covers both basics and advances in several areas of acoustics. Several chapters provide good mathematical depth, making the handbook useful as a research and technical resource. ...Overall, a very useful educational and research resource. Summing Up: Recommended. Upper-division undergraduates through professionals." (M. G. Prasad, CHOICE, Vol. 45 (5), January, 2008) "This book covers a wide range of topics and the inclusion of musical acoustics, computer and electronic music appeal to me (singer, song-writer, performer and recording studio co-owner). This handbook is probably well suited for an undergraduate-level introduction to an acoustics course. ... The wide range of topics, inclusion of music-related chapters, eye-pleasing presentations and other useful features make this a very good book to have on your shelf." (Tim Casey, International Journal of Acoustics and Vibration, Vol. 13 (1), 2008) "The Springer Handbook of Acoustics comprises 28 chapters written by 33 authors. The Handbook of Acoustics is useful as a source book for anyone who needs or wants to become familiar with the jargon and issues related to a specific subfield of acoustics ... ." (Robert I. Odom, Siam Review, Vol. 50 (3), 2008) The Springer Handbook of Acoustics reviews the most important areas of acoustics, with emphasis on current research. The authors of the various chapters are all experts in their fields. Each chapter is richly illustrated with figures and tables. The latest research and applications are incorporated throughout, e.g. computer recognition and synthesis of speech, physiological acoustics, psychological acoustics, thermoacoustics, diagnostic imaging and therapeutic applications and acoustical oceanography. This new edition of the Handbook features over 13 revised and expanded chapters, new illustrations and 3 new chapters covering microphone arrays, acoustic metamaterials and acoustic emission. These improvements will make the handbook even more useful as a reference and a guide for researchers and students in every branch of acoustics.

Science Abstracts

The Handbook of Speech Perception

Theory and Practice

Making Parents

William Whittington presents a contemporary study of the rise of sound design and its relationship to science fiction cinema. This in-depth study considers the evolution of sound design not only through cultural and technological developments during the last four decades, but also through the attitudes and expectations of filmgoers.

A new edition of a graduate-level machine learning textbook that focuses on the analysis and theory of algorithms. This book is a general introduction to machine learning that can serve as a textbook for graduate students and a reference for researchers. It covers fundamental modern topics in machine learning while providing the theoretical basis and conceptual tools needed for the discussion and justification of algorithms. It also describes several key aspects of the application of these algorithms. The authors aim to present novel theoretical tools and concepts while giving concise proofs even for relatively advanced topics. Foundations of Machine Learning is unique in its focus on the analysis and theory of algorithms. The first four chapters lay the theoretical foundation for what follows; subsequent chapters are mostly self-contained. Topics covered include the Probably Approximately Correct (PAC) learning framework; generalization bounds based on Rademacher complexity and VC-dimension; Support Vector Machines (SVMs); kernel methods; boosting; on-line learning; multi-class classification; ranking; regression; algorithmic stability; dimensionality reduction; learning automata and languages; and reinforcement learning. Each chapter ends with a set of exercises. Appendixes provide additional material including concise probability review. This second edition offers three new chapters, on model selection, maximum entropy models, and conditional entropy models. New material in the appendixes includes a major section on Fenchel duality, expanded coverage of concentration inequalities, and an entirely new entry on information theory. More than half of the exercises are new to this edition.