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Formalized Music Iannis Xenakis 1992 Pendragon Press is proud to offer this new, revised, and expanded edition of Formalized Music, Iannis Xenakis's landmark book of 1971. In addition to three totally new chapters examining recent breakthroughs in music theory, two original computer programs illustrating the actual realization of newly proposed methods of composition, and an appendix of the very latest developments of stochastic synthesis as an invitation to future exploration, Xenakis offers a very critical self-examination of his theoretical propositions and artistic output of the past thirty-five years. This edition of Formalized Music is an essential tool for understanding the man and the thought processes of one of this century's most important and revolutionary musical figures.

Representations of Musical Signals Professor of Media Arts and Technology Curtis Roads 1991 Representations of Musical Signals describes a new generation of digital audio and computer music systems made possible by recent advances in digital signal processing theory, hardware design, and programming techniques. It explores new representations of musical signals that can have profound effects on the way musicians conceive of and realize musical ideas. In particular, the book focuses on models that combine time-domain and frequency-domain representations (grains, wavelets, and physical models), visual programming and advanced user interfaces, and that incorporate musical knowledge using artificial intelligence techniques and adaptive neural networks. The 14 contributions take up issues of how musical signals should be displayed to musicians, engineers, and scientists who want to work with them, how professionals can work with the representations to accomplish musical tasks, how systems can be designed to permit working with multiple views of the same signal, and how representations of musical signals should be organized to promote efficient communication between devices using these signals. Giovanni DePoli is a member of the faculty of the Department of Informatics and Electronics at the University of Padua. Aldo Piccialli is a member of the faculty of the Department of Physics at the University of Naples. Curtis Roads is a composer and consulting editor of Computer Music Journal. Contributors: J. M. Adrien. D. Arfib. R. D'Autilia. C. Cadoz. S. Cavaliere G. De Poli, G.

Evangelista. J. Florens. G. Garnett. A. Grossman. F. Guerra. K. Hebei. R. KronlandMartinet. C. Lischka. A. Piccialli. J-C. Risset. C. Roads. C. Scaletti., J. Sundberg.

Music Data Analysis Claus Weihs 2016-11-17 This book provides a comprehensive overview of music data analysis, from introductory material to advanced concepts. It covers various applications including transcription and segmentation as well as chord and harmony, instrument and tempo recognition. It also discusses the implementation aspects of music data analysis such as architecture, user interface and hardware. It is ideal for use in university classes with an interest in music data analysis. It also could be used in computer science and statistics as well as musicology.

Dilla Time Dan Charnas 2022-02-01 A NEW YORK TIMES BEST SELLER "This book is a must for everyone interested in illuminating the idea of unexplainable genius." —QUESTLOVE Equal parts biography, musicology, and cultural history, Dilla Time chronicles the life and legacy of J Dilla, a musical genius who transformed the sound of popular music for the twenty-first century. He wasn't known to mainstream audiences, even though he worked with renowned acts like D'Angelo and Erykah Badu and influenced the music of superstars like Michael Jackson and Janet Jackson. He died at the age of thirty-two, and in his lifetime he never had a pop hit. Yet since his death, J Dilla has become a demigod: revered by jazz musicians and rap icons from Robert Glasper to Kendrick Lamar; memorialized in symphonies and taught at universities. And at the core of this adulation is innovation: a new kind of musical time-feel that he created on a drum machine, but one that changed the way "traditional" musicians play. In Dilla Time, Dan Charnas chronicles the life of James DeWitt Yancey, from his gifted childhood in Detroit, to his rise as a Grammy-nominated hip-hop producer, to the rare blood disease that caused his premature death; and follows the people who kept him and his ideas alive. He also rewinds the histories of American rhythms: from the birth of soul in Dilla's own "Motown," to funk, techno, and disco. Here, music is a story of Black culture in America and of what happens when human and machine times are synthesized into something new. Dilla Time is a different kind of book about music, a visual experience with graphics that build those concepts step by step for fans and novices alike, teaching us to "see" and feel rhythm in a unique and enjoyable way. Dilla's beats, startling some people with their seeming "sloppiness," were actually the work of a perfectionist almost spiritually devoted to his music. This is the story of the man and his machines, his family, friends, partners, and celebrity collaborators. Culled from more than 150 interviews about one of the most important and influential musical figures of the past hundred years, Dilla Time is a book as delightfully detail-oriented and unique as J Dilla's music itself.

The Csound Book Richard Boulanger 2000-02-28 Created in 1985 by Barry Vercoe, Csound is one of the most widely used software sound synthesis systems. Because it is so powerful, mastering Csound can take a good deal of time and effort. But this long-awaited guide will dramatically straighten the learning curve and enable musicians to take advantage of this rich computer technology available for creating music. Written by the world's leading educators, programmers, sound designers, and composers, this comprehensive guide covers both the basics of Csound and the theoretical and musical concepts necessary to use the program effectively. The thirty-two tutorial chapters cover: additive, subtractive, FM, AM, FOF, granular, wavetable, waveguide, vector, LA, and other hybrid methods; analysis and resynthesis using ADSYN, LP, and the Phase Vocoder;

sample processing; mathematical and physical modeling; and digital signal processing, including room simulation and 3D modeling. CDs for this book are no longer produced. To request files, please email digitalproducts-cs@mit.edu.

Foundations of Computer Music Curtis Roads 1987-01-01 This survey chronicles the major advances in computer music that have changed the way music is composed, performed, and recorded. It contains many of the classic, seminal articles in the field (most of which are now out of print) in revised and updated versions. Computer music pioneers, digital audio specialists, and highly knowledgeable practitioners have contributed to the book. Thirty-six articles written in the 1970s and 1980s cover sound synthesis techniques, synthesizer hardware and engineering, software systems for music, and perception and digital signal processing. The editors have provided extensive summaries for each section. Curtis Roads is editor of *Computer Music Journal*. John Strawn is a Research Associate at the Center for Computer Research in Music and Acoustics (CCRMA) at Stanford University.

The SuperCollider Book Scott Wilson 2011-04-15 The essential reference to SuperCollider, a powerful, flexible, open-source, cross-platform audio programming language. SuperCollider is one of the most important domain-specific audio programming languages, with potential applications that include real-time interaction, installations, electroacoustic pieces, generative music, and audiovisuals. The *SuperCollider Book* is the essential reference to this powerful and flexible language, offering students and professionals a collection of tutorials, essays, and projects. With contributions from top academics, artists, and technologists that cover topics at levels from the introductory to the specialized, it will be a valuable sourcebook both for beginners and for advanced users. SuperCollider, first developed by James McCartney, is an accessible blend of Smalltalk, C, and further ideas from a number of programming languages. Free, open-source, cross-platform, and with a diverse and supportive developer community, it is often the first programming language sound artists and computer musicians learn. The *SuperCollider Book* is the long-awaited guide to the design, syntax, and use of the SuperCollider language. The first chapters offer an introduction to the basics, including a friendly tutorial for absolute beginners, providing the reader with skills that can serve as a foundation for further learning. Later chapters cover more advanced topics and particular topics in computer music, including programming, sonification, spatialization, microsound, GUIs, machine listening, alternative tunings, and non-real-time synthesis; practical applications and philosophical insights from the composer's and artist's perspectives; and "under the hood," developer's-eye views of SuperCollider's inner workings. A Web site accompanying the book offers code, links to the application itself and its source code, and a variety of third-party extras, extensions, libraries, and examples.

Composers and the Computer Curtis Roads 1985

Topless Cellist Joan Rothfuss 2014-09-12 The first book to explore the extraordinary career of musician and performance artist Charlotte Moorman, whose work combined classical rigor, avant-garde experiment, and madcap daring. The Juilliard-trained cellist Charlotte Moorman sat nude behind a cello of carved ice, performed while dangling from helium-filled balloons, and deployed an array of instruments on *The Mike*

Douglas Show that included her cello, a whistle, a cap gun, a gong, and a belch. She did a striptease while playing Bach in Nam June Paik's Sonata for Adults Only. In the 1960s, Moorman (1933–1991) became famous for her madcap (and often unclothed) performance antics; less famous but more significant is Moorman's transformative influence on contemporary performance practice—and her dedication to the idea that avant-garde art should reach the widest possible audience. In *Topless Cellist*, the first book to explore Moorman's life and work, Joan Rothfuss rediscovers, and recovers, the legacy of an extraordinary American artist. Moorman's arrest in 1967 for performing topless made her a water-cooler conversation-starter, but before her tabloid fame she was a star of the avant-garde performance circuit, with a repertoire of pieces by, among others, Yoko Ono, Joseph Beuys, John Cage, and Paik, her main artistic partner. Moorman invented a new mode of performance that combined classical rigor, jazz improvisation, and avant-garde experiment—informed by intuition, daring, and love of spectacle. Moorman's annual festival of the avant-garde offered the public a lively sampler of contemporary art in performance, music, dance, poetry, film, and other media. Rothfuss chronicles Moorman's life from her youth in Little Rock, Arkansas (where she was “Miss City Beautiful” of 1952) through her career in New York's avant-garde to her death from breast cancer in 1991. (Typically, she approached her treatment as if it were a performance.) Deeply researched and profusely illustrated, *Topless Cellist* offers a fascinating, sometimes heartbreaking, often hilarious story of an artist whose importance was more than the sum of her performances.

Microsound Curtis Roads 2004-08-20 Below the level of the musical note lies the realm of microsound, of sound particles lasting less than one-tenth of a second. Recent technological advances allow us to probe and manipulate these pinpoints of sound, dissolving the traditional building blocks of music—notes and their intervals—into a more fluid and supple medium. The sensations of point, pulse (series of points), line (tone), and surface (texture) emerge as particle density increases. Sounds coalesce, evaporate, and mutate into other sounds. Composers have used theories of microsound in computer music since the 1950s. Distinguished practitioners include Karlheinz Stockhausen and Iannis Xenakis. Today, with the increased interest in computer and electronic music, many young composers and software synthesis developers are exploring its advantages. Covering all aspects of composition with sound particles, *Microsound* offers composition theory, historical accounts, technical overviews, acoustical experiments, descriptions of musical works, and aesthetic reflections. The book is accompanied by an audio CD of examples.

Designing Sound Andy Farnell 2010-08-20 A practitioner's guide to the basic principles of creating sound effects using easily accessed free software. *Designing Sound* teaches students and professional sound designers to understand and create sound effects starting from nothing. Its thesis is that any sound can be generated from first principles, guided by analysis and synthesis. The text takes a practitioner's perspective, exploring the basic principles of making ordinary, everyday sounds using an easily accessed free software. Readers use the Pure Data (Pd) language to construct sound objects, which are more flexible and useful than recordings. Sound is considered as a process, rather than as data—an approach sometimes known as “procedural audio.” Procedural sound is a living sound effect that can run as computer code and be changed in real time according to unpredictable events. Applications include video games, film, animation, and media in which sound is part of an interactive process. The book takes a practical, systematic approach to the subject, teaching by example and

providing background information that offers a firm theoretical context for its pragmatic stance. [Many of the examples follow a pattern, beginning with a discussion of the nature and physics of a sound, proceeding through the development of models and the implementation of examples, to the final step of producing a Pure Data program for the desired sound. Different synthesis methods are discussed, analyzed, and refined throughout.] After mastering the techniques presented in *Designing Sound*, students will be able to build their own sound objects for use in interactive applications and other projects

Processing Casey Reas 2007 An introduction to the ideas of computer programming within the context of the visual arts that also serves as a reference and text for Processing, an open-source programming language designed for creating images, animation, and interactivity.

The Theory and Technique of Electronic Music Miller Puckette 2007 Develops both the theory and the practice of synthesizing musical sounds using computers. This work contains chapters that starts with a theoretical description of one technique or problem area and ends with a series of working examples, covering a range of applications. It is also suitable for computer music researchers.

Project: Happily Ever After Alisa Bowman 2010-12-28 What do you do when your marriage is so unhappy that you begin to fantasize about your husband's funeral? That's how bad it got for Alisa Bowman. . . So she launched a last-ditch effort to save her marriage. Project: Happily Ever After is her fearlessly honest and humorous account of how she went from being a "divorce daydreamer" to renewing her wedding vows—and all of the steps in between. From bikini waxes to erotica, romance instruction manuals to second honeymoons, the silent treatment to power struggles, she goes where many marriage-improvement gurus have feared to tread. Equal parts funny, poignant, and most importantly, useful, Bowman's story will give other miserably-married folks courage and hope. And in addition to telling her own story, she packs straightforward prescriptive guidance, including a "10-Step Marital Improvement Guide." Readers will laugh. They'll cry. And they can start on the road toward their own happy ending!

Listening through the Noise Joanna Demers 2010-07-30 Contemporary electronic music has splintered into numerous genres and subgenres, all of which share a concern with whether sound, in itself, bears meaning. *Listening through the Noise* considers how the experience of listening to electronic music constitutes a departure from the expectations that have long governed music listening in the West.

The Oxford Handbook of Computer Music R. T. Dean 2009-09-16 This handbook provides a cross-section of the most field-defining topics and debates in the field of computer music today. From music cognition to pedagogy, it situates computer music in the broad context of its creation and performance across the full range of issues that crop up in discourse in the field.

Sonic Warfare Steve Goodman 2012-08-17 An exploration of the production, transmission, and mutation of affective tonality—when sound helps produce a bad vibe. Sound can be deployed to produce discomfort, express a threat, or create an ambience of fear or dread—to produce a bad vibe. Sonic weapons of this sort

include the “psychoacoustic correction” aimed at Panama strongman Manuel Noriega by the U.S. Army and at the Branch Davidians in Waco by the FBI, sonic booms (or “sound bombs”) over the Gaza Strip, and high-frequency rat repellants used against teenagers in malls. At the same time, artists and musicians generate intense frequencies in the search for new aesthetic experiences and new ways of mobilizing bodies in rhythm. In *Sonic Warfare*, Steve Goodman explores these uses of acoustic force and how they affect populations. Traversing philosophy, science, fiction, aesthetics, and popular culture, he maps a (dis)continuum of vibrational force, encompassing police and military research into acoustic means of crowd control, the corporate deployment of sonic branding, and the intense sonic encounters of sound art and music culture. Goodman concludes with speculations on the not yet heard—the concept of unsound, which relates to both the peripheries of auditory perception and the unactualized nexus of rhythms and frequencies within audible bandwidths.

Audio Culture Christoph Cox 2004-09-01 Contributions : Brian Eno, John Cage, Jacques Attali, Umberto Eco, Christian Marclay, Simon Reynolds, Pierre Schaeffer, Marshall McLuhan, Derek Bailey, Pauline Oliveros, Tony Conrad, David Toop... etc.

The Music Machine Curtis Roads 1989 In *The Music Machine*, Curtis Roads brings together 53 classic articles published in *Computer Music Journal* between 1980 and 1985.

Music: A Mathematical Offering Dave Benson 2007 Explores interaction between music and mathematics including harmony, symmetry, digital music and perception of sound.

Evolutionary Computer Music Eduardo R. Miranda 2007-10-12 This book discusses the applications of evolutionary computation to music and the tools needed to create and study such systems. These tools can be combined to create surrogate artificial worlds populated by interacting simulated organisms in which complex musical experiments can be performed. The book demonstrates that evolutionary systems can be used to create and to study musical compositions and cultures in ways that have never before been achieved.

Music Query Walter B. Hewlett 2004 Recent studies from Europe and North America concerned with the query and analysis of musical data. The field of music query has grown from tentative beginnings in bibliographical systems of earlier decades to a substantial area of interdisciplinary studies in little more than a decade. This volume assembles recent studies from Europe and North America concerned with the query and analysis of musical data. Among these, methods for the synchronization of sound and symbolic data, for automatic analysis through perceptual rules, and for computing a transportation distance for thematic comparison are described. The modeling of rhythmic motifs, of melodic traits, and of cognitive distance are discussed. User studies report on human preferences in modes of query (humming vs. tapping, etc.) and on the comparative success rates of more than two dozen proposed metrics for melodic comparison.

Microsound A comprehensive presentation of the techniques and aesthetics of composition with sound particles.

Bug Music David Rothenberg 2013-04-16 In the spring of 2013 the cicadas in the Northeastern United States will yet again emerge from their seventeen-year cycle—the longest gestation period of any animal. Those who experience this great sonic invasion compare their sense of wonder to the arrival of a comet or a solar eclipse. This unending rhythmic cycle is just one unique example of how the pulse and noise of insects has taught humans the meaning of rhythm, from the whirr of a cricket's wings to this unfathomable and exact seventeen-year beat. In listening to cicadas, as well as other humming, clicking, and thrumming insects, *Bug Music* is the first book to consider the radical notion that we humans got our idea of rhythm, synchronization, and dance from the world of insect sounds that surrounded our species over the millions of years over which we evolved. Completing the trilogy he began with *Why Birds Sing* and *Thousand Mile Song*, David Rothenberg explores a unique part of our relationship with nature and sound—the music of insects that has provided a soundtrack for humanity throughout the history of our species. *Bug Music* continues Rothenberg's in-depth research and spirited writing on the relationship between human and animal music, and it follows him as he explores insect influences in classical and modern music, plays his saxophone with crickets and other insects, and confers with researchers and scientists nationwide. This engaging and thought-provoking book challenges our understanding of our place in nature and our relationship to the creatures surrounding us, and makes a passionate case for the interconnectedness of species.

Global Activism Peter Weibel 2015-08-21 Documenting and describing the emerging “performative democracy,” the first new art form of the twenty-first century. Today political protest often takes the form of spontaneous, noninstitutional, mass action. Mass protests during the Arab Spring showed that established systems of power—in that case, the reciprocal support among Arab dictators and Western democracies—can be interrupted, at least for a short moment in history. These new activist movements often use online media to spread their message. Mass demonstrations from Tahrir Square in Cairo to Taksim Square in Istanbul show the power of networked communication to fuel “performative democracy”—at the center of which stands the global citizen. Art is emerging as a public space in which the individual can claim the promises of constitutional and state democracy. Activism may be the first new art form of the twenty-first century. *global aCtIVISm* (the capitalized letters form the Latin word *civis*, emphasizing the power of citizens) describes and documents politically inspired art—global art practices that draw attention to grievances and demand the transformation of existing conditions through actions, demonstrations, and performances in public space. Essays by leading thinkers—including Noam Chomsky, Antonio Negri, Peter Sloterdijk, and Slavoj Žižek—consider the emerging role of the citizen in the new performative democracy. The essays are followed by images of art objects, illustrations, documents, and other material (first shown in an exhibition at ZKM Center for Art and Media, Karlsruhe) as well as case studies by artists and activists. Essays by Can Altay, Sruti Bala and Veronika Zangl, Tatiana Bazzichelli, Olaf Bertram-Nothnagel, Angela Bonadies, Robin Celikates, Korhan Gümüş, Dietrich Heißenbüttel, Bruno Latour, Sarah Maske, Ugo Mattei, Graham Meikle, André Mesquita, Marcus Michaelsen, Walter D. Mignolo, MTL, Antonio Negri, Dimitris Papadopoulos, Vassilis Tsianos and Margarita Tsomou, Rita Raley, Arman and Arash T. Riahi, Martha Rosler, Peter Sloterdijk, Karl-Peter Sommermann, Guido Strack, Jackie Sumell, Zixue Tai, Tatiana Volkova, Christoph Wachter and Mathias Jud, Dan S. Wang and Sarah Augusta Lewison, Peter Weibel, Ahmad Zadari, Bo Zheng, Ragip Zik, Slavoj Žižek. Interviews with Ammar Abo Bakr and Ganzeer, Younes Belghazi and Hadeer Elmahdawy, Erdem Gündüz, Joulia Strauss

Stereophonica Gascia Ouzounian 2021-02-16 Episodes in the transformation of our understanding of sound and space, from binaural listening in the nineteenth century to contemporary sound art. The relationship between sound and space has become central to both creative practices in music and sound art and contemporary scholarship on sound. Entire subfields have emerged in connection to the spatial aspects of sound, from spatial audio and sound installation to acoustic ecology and soundscape studies. But how did our understanding of sound become spatial? In *Stereophonica*, Gascia Ouzounian examines a series of historical episodes that transformed ideas of sound and space, from the advent of stereo technologies in the nineteenth century to visual representations of sonic environments today. Developing a uniquely interdisciplinary perspective, Ouzounian draws on both the history of science and technology and the history of music and sound art. She investigates the binaural apparatus that allowed nineteenth-century listeners to observe sound in three dimensions; examines the development of military technologies for sound location during World War I; revisits experiments in stereo sound at Bell Telephone Laboratories in the 1930s; and considers the creation of "optimized acoustical environments" for theaters and factories. She explores the development of multichannel "spatial music" in the 1950s and sound installation art in the 1960s; analyzes the mapping of soundscapes; and investigates contemporary approaches to sonic urbanism, sonic practices that reimagine urban environments through sound. Rich in detail but accessible and engaging, and generously illustrated with photographs, drawings, maps, and diagrams of devices and artworks, *Stereophonica* brings an acute, imaginative, and much-needed historical sensibility to the growing literature around sound and space.

Composing Electronic Music Curtis Roads 2015 Electronic music evokes new sensations, feelings, and thoughts in both composers and listeners. Opening the door to an unlimited universe of sound, it engages spatialization as an integral aspect of composition and focuses on sound transformation as a core structural strategy. In this new domain, pitch occurs as a flowing and ephemeral substance that can be bent, modulated, or dissolved into noise. Similarly, time occurs not merely as a fixed duration subdivided by ratios, but as a plastic medium that can be generated, modulated, reversed, warped, scrambled, and granulated. Envelope and waveform undulations on all time scales interweave to generate form. The power of algorithmic methods amplify the capabilities of music technology. Taken together, these constitute game-changing possibilities. This convergence of technical and aesthetic trends prompts the need for a new text focused on the opportunities of a sound oriented, multiscale approach to composition of electronic music. Sound oriented means a practice that takes place in the presence of sound. Multiscale means an approach that takes into account the perceptual and physical reality of multiple, interacting time scales-each of which can be composed. After more than a century of research and development, now is an appropriate moment to step back and reevaluate all that has changed under the ground of artistic practice. *Composing Electronic Music* outlines a new theory of composition based on the toolkit of electronic music techniques. The theory consists of a framework of concepts and a vocabulary of terms describing musical materials, their transformation, and their organization. Central to this discourse is the notion of narrative structure in composition-how sounds are born, interact, transform, and die. It presents a guidebook: a tour of facts, history, commentary, opinions, and pointers to interesting ideas and new possibilities to consider and explore.

Understanding the Art of Sound Organization Leigh Landy 2007-08-17 The first work to propose a

comprehensive musicological framework to study sound-based music, a rapidly developing body of work that includes electroacoustic art music, turntable composition, and acoustic and digital sound installations. The art of sound organization, also known as electroacoustic music, uses sounds not available to traditional music making, including prerecorded, synthesized, and processed sounds. The body of work of such sound-based music (which includes electroacoustic art music, turntable composition, computer games, and acoustic and digital sound installations) has developed more rapidly than its musicology. Understanding the Art of Sound Organization proposes the first general foundational framework for the study of the art of sound organization, defining terms, discussing relevant forms of music, categorizing works, and setting sound-based music in interdisciplinary contexts. Leigh Landy's goal in this book is not only to create a theoretical framework but also to make the work more accessible—to suggest a way to understand sound-based music, to give a listener what he terms “something to hold on to,” for example, by connecting elements in a work to everyday experience. Landy considers the difficulties of categorizing works and discusses such types of works as sonic art and electroacoustic music, pointing out where they overlap and how they are distinctive. He proposes a “sound-based music paradigm” that transcends such traditional categories as art and pop music. Landy defines patterns that suggest a general framework and places the studies of sound-based music into interdisciplinary contexts, from acoustics to semiotics, proposing a holistic research approach that considers the interconnectedness of a given work's history, theory, technological aspects, and social impact. The author's ElectroAcoustic Resource Site (EARS, www.ears.dmu.ac.uk), the architecture of which parallels this book's structure, offers updated bibliographic resource abstracts and related information.

Computer Models of Musical Creativity David Cope 2005 "He then describes a model that integrates these different aspects - an inductive-association computational process that can create music. Cope's writing style is lively and nontechnical; the reader needs neither knowledge of computer programming nor specialized computer hardware or software to follow the text."--Jacket.

Creating Sounds from Scratch Scott B. Metcalfe 2017-02-02 Creating Sounds from Scratch is a practical, in-depth resource on the most common forms of music synthesis. It includes historical context, an overview of concepts in sound and hearing, and practical training examples to help sound designers and electronic music producers effectively manipulate presets and create new sounds. The book covers the all of the main synthesis techniques including analog subtractive, FM, additive, physical modeling, wavetable, sample-based, and granular. While the book is grounded in theory, it relies on practical examples and contemporary production techniques show the reader how to utilize electronic sound design to maximize and improve his or her work. Creating Sounds from Scratch is ideal for all who work in sound creation, composition, editing, and contemporary commercial production.

Introduction to Computer Music Nick Collins 2010-02-01 This title deals with both the practical use of technology in music and the key principles underpinning the discipline. It targets both musicians exploring computers, and technologists engaging with music, and does so in the confidence that both groups can learn tremendously from the cross-disciplinary encounter.

From Xenakis's UPIC to Graphic Notation Today Richard Barrett 2020-04-20 On the legacy of Xenakis' innovations in music notation for contemporary composers Trained in mechanical engineering, Greek-French composer Iannis Xenakis (1922-2001) transformed mathematical models into architectonic musical entities. In the late 1970s Xenakis developed a digital apparatus that rendered waveforms drawn on a tablet as musical compositions. The device was called UPIC, or Unité Polyagogique Informatique du CEMAMu, named for the French contemporary music research institute that Xenakis had helped found a decade earlier. The device proved to be an essential tool for the development of contemporary music--a version of the software is still used by today's composers. Featuring archival materials, this book examines the origins of Xenakis' UPIC. It also serves as a compositional tool: embedded QR codes allow readers to create their own sound-images from UPIC compositions.

Spaces Speak, Are You Listening? Barry Blesser 2009-09-18 How we experience space by listening: the concepts of aural architecture, with examples ranging from Gothic cathedrals to surround sound home theater. We experience spaces not only by seeing but also by listening. We can navigate a room in the dark, and "hear" the emptiness of a house without furniture. Our experience of music in a concert hall depends on whether we sit in the front row or under the balcony. The unique acoustics of religious spaces acquire symbolic meaning. Social relationships are strongly influenced by the way that space changes sound. In *Spaces Speak, Are You Listening?*, Barry Blesser and Linda-Ruth Salter examine auditory spatial awareness: experiencing space by attentive listening. Every environment has an aural architecture. The audible attributes of physical space have always contributed to the fabric of human culture, as demonstrated by prehistoric multimedia cave paintings, classical Greek open-air theaters, Gothic cathedrals, acoustic geography of French villages, modern music reproduction, and virtual spaces in home theaters. Auditory spatial awareness is a prism that reveals a culture's attitudes toward hearing and space. Some listeners can learn to "see" objects with their ears, but even without training, we can all hear spatial geometry such as an open door or low ceiling. Integrating contributions from a wide range of disciplines—including architecture, music, acoustics, evolution, anthropology, cognitive psychology, audio engineering, and many others—*Spaces Speak, Are You Listening?* establishes the concepts and language of aural architecture. These concepts provide an interdisciplinary guide for anyone interested in gaining a better understanding of how space enhances our well-being. Aural architecture is not the exclusive domain of specialists. Accidentally or intentionally, we all function as aural architects.

The Computer Music Tutorial Curtis Roads 1996-02-27 A comprehensive text and reference that covers all aspects of computer music, including digital audio, synthesis techniques, signal processing, musical input devices, performance software, editing systems, algorithmic composition, MIDI, synthesizer architecture, system interconnection, and psychoacoustics. The *Computer Music Tutorial* is a comprehensive text and reference that covers all aspects of computer music, including digital audio, synthesis techniques, signal processing, musical input devices, performance software, editing systems, algorithmic composition, MIDI, synthesizer architecture, system interconnection, and psychoacoustics. A special effort has been made to impart an appreciation for the rich history behind current activities in the field. Profusely illustrated and exhaustively referenced and cross-referenced, *The Computer Music Tutorial* provides a step-by-step introduction to the entire field of computer music techniques. Written for nontechnical as well as technical readers, it uses

hundreds of charts, diagrams, screen images, and photographs as well as clear explanations to present basic concepts and terms. Mathematical notation and program code examples are used only when absolutely necessary. Explanations are not tied to any specific software or hardware. The material in this book was compiled and refined over a period of several years of teaching in classes at Harvard University, Oberlin Conservatory, the University of Naples, IRCAM, Les Ateliers UPIC, and in seminars and workshops in North America, Europe, and Asia.

Sonic Interaction Design Karmen Franinovic 2013-03-22 An overview of emerging topics, theories, methods, and practices in sonic interactive design, with a focus on the multisensory aspects of sonic experience. Sound is an integral part of every user experience but a neglected medium in design disciplines. Design of an artifact's sonic qualities is often limited to the shaping of functional, representational, and signaling roles of sound. The interdisciplinary field of sonic interaction design (SID) challenges these prevalent approaches by considering sound as an active medium that can enable novel sensory and social experiences through interactive technologies. This book offers an overview of the emerging SID research, discussing theories, methods, and practices, with a focus on the multisensory aspects of sonic experience. *Sonic Interaction Design* gathers contributions from scholars, artists, and designers working at the intersections of fields ranging from electronic music to cognitive science. They offer both theoretical considerations of key themes and case studies of products and systems created for such contexts as mobile music, sensorimotor learning, rehabilitation, and gaming. The goal is not only to extend the existing research and pedagogical approaches to SID but also to foster domains of practice for sound designers, architects, interaction designers, media artists, product designers, and urban planners. Taken together, the chapters provide a foundation for a still-emerging field, affording a new generation of designers a fresh perspective on interactive sound as a situated and multisensory experience. Contributors Federico Avanzini, Gerold Baier, Stephen Barrass, Olivier Bau, Karin Bijsterveld, Roberto Bresin, Stephen Brewster, Jeremy Coopersotck, Amalia De Gotzen, Stefano Delle Monache, Cumhur Erkut, George Essl, Karmen Franinović, Bruno L. Giordano, Antti Jylhä, Thomas Hermann, Daniel Hug, Johan Kildal, Stefan Krebs, Anatole Lecuyer, Wendy Mackay, David Merrill, Roderick Murray-Smith, Sile O'Modhrain, Pietro Polotti, Hayes Raffle, Michal Rinott, Davide Rocchesso, Antonio Rodà, Christopher Salter, Zack Settel, Stefania Serafin, Simone Spagnol, Jean Sreng, Patrick Susini, Atau Tanaka, Yon Visell, Mike Wezniewski, John Williamson

Musical Signal Processing Curtis Roads 2013-12-19 First Published in 1997. Routledge is an imprint of Taylor & Francis, an informa company.

Software Studies Roger F. Malina 2008 This collection of short expository, critical and speculative texts offers a field guide to the cultural, political, social and aesthetic impact of software. Experts from a range of disciplines each take a key topic in software and the understanding of software, such as algorithms and logical structures.

Digital Magma Jean-Yves Leloup 2010

Microsound Curtis Roads 2001 A comprehensive presentation of the techniques and aesthetics of composition

with sound particles.

Xenakis James Harley 2004-08-02 *Xenakis: His Life in Music* is a full-length study of the influential contemporary composer Iannis Xenakis. Following the trajectory of Xenakis's compositional development, James Harley, who studied with Xenakis, presents the works together with clear explanations of the technical and conceptual innovations that shaped them. Harley examines the relationship between the composer and two early influences: Messiaen and Le Corbusier. Particular attention is paid to analyzing works which were vital to the composer's creative development, from early, unpublished works to the breakthrough pieces *Metastasis* and *Pithoprakta*, through the oft-discussed decade of formalization and the evolving styles of the succeeding three decades.