

# The Computer Music Tutorial Curtis Roads

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**Musical Signal Processing** - Curtis Roads  
2013-12-19

First Published in 1997. Routledge is an imprint of Taylor & Francis, an informa company.

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.

Composers and the Computer - Curtis Roads

1985

**Algorithmic Composition** - Gerhard Nierhaus 2009-08-28

Algorithmic composition – composing by means of formalizable methods – has a century old tradition not only in occidental music history. This is the first book to provide a detailed overview of prominent procedures of algorithmic composition in a pragmatic way rather than by treating formalizable aspects in single works. In addition to an historic overview, each chapter presents a specific class of algorithm in a compositional context by providing a general introduction to its development and theoretical basis and describes different musical applications. Each chapter outlines the strengths, weaknesses and possible aesthetical implications resulting from the application of the treated approaches. Topics covered are:

markov models, generative grammars, transition networks, chaos and self-similarity, genetic algorithms, cellular automata, neural networks and artificial intelligence are covered. The comprehensive bibliography makes this work ideal for the musician and the researcher alike.

**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.

### **Representations of Musical Signals -**

Giovanni De Poli 1991-05-13

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.

Introduction to Computer Music - Nick

Collins 2010-02-01

A must-have introduction that bridges the gap between music and computing The rise in number of composer-programmers has given cause for an essential resource that addresses the gap between music and computing and looks at the many different software packages that deal with music technology. This up-to-date book fulfills that demand and deals with both the practical use of technology in music as well as the principles behind the discipline. Aimed at musicians exploring computers and technologists engaged with music, this unique guide merges the two worlds so that both musicians and computer scientists can benefit. Defines computer music and offers a solid introduction to representing music on a computer Examines computer music software, the musical instrument digital interface, virtual studios, file formats, and more Shares recording tips and tricks as

well as exercises at the end of each section to enhance your learning experience. Reviews sound analysis, processing, synthesis, networks, composition, and modeling. Assuming little to no prior experience in computer programming, this engaging book is an ideal starting point for discovering the beauty that can be created when technology and music unite.

**Algorithmic Composition** - Mary Simoni  
2013-01-02

Algorithmic Composition offers new ways of thinking about the organization of sound that we call music.

**Dance Music Manual** - Rick Snoman  
2013-05-02

Whatever your level of experience, the Dance Music Manual is packed with sound advice, techniques and practical examples to help you achieve professional results. Written by a professional producer and remixer, this book offers a comprehensive

approach to music production, including knowledge of the tools, equipment and different dance genres. Get more advice and resources from the book's official website, [www.dancemusicproduction.com](http://www.dancemusicproduction.com). \* Included in the new edition are sections on recording instruments alongside new chapters covering more dance music genres. \* Examines all aspects of music production, from sound design, compression & effect to mixing & mastering to publishing & promoting, to help you become a better producer. \* The companion CD provides sample and example tracks, demonstrating the techniques used in the book.

**Sound Synthesis and Sampling** - Martin Russ  
2012-08-21

Sound Synthesis and Sampling' provides a comprehensive introduction to the underlying principles and practical techniques applied to both commercial and research sound synthesizers. This new

edition has been updated throughout to reflect current needs and practices- revised and placed in a modern context, providing a guide to the theory of sound and sampling in the context of software and hardware that enables sound making. For the revised edition emphasis is on expanding explanations of software and computers, new sections include techniques for making sound physically, sections within analog and digital electronics. Martin Russ is well known and the book praised for its highly readable and non-mathematical approach making the subject accessible to readers starting out on computer music courses or those working in a studio.

**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.

*Audio Effects* - Joshua D. Reiss 2014-10-23

*Audio Effects: Theory, Implementation and Application* explores digital audio effects relevant to audio signal processing and music informatics. It supplies fundamental background information on digital signal processing, focusing on audio-specific aspects that constitute the building block on which audio effects are developed. The text integrates theory and practice, relating technical implementation to musical implications. It can be used to gain an understanding of the operation of existing audio effects or to create new ones. In addition to delivering detailed coverage of common (and unusual) audio effects, the book discusses current digital audio

standards, most notably VST and AudioUnit. Source code is provided in C/C++ and implemented as audio effect plug-ins with accompanying sound samples. Each section of the book includes study questions, anecdotes from the history of music technology, and examples that offer valuable real-world insight, making this an ideal resource for researchers and for students moving directly into industry.

*The Oxford Handbook of Algorithmic Music* - Alex McLean 2018-01-18

With the ongoing development of algorithmic composition programs and communities of practice expanding, algorithmic music faces a turning point. Joining dozens of emerging and established scholars alongside leading practitioners in the field, chapters in this Handbook both describe the state of algorithmic composition and also set the agenda for critical research on and analysis of

algorithmic music. Organized into four sections, chapters explore the music's history, utility, community, politics, and potential for mass consumption.

Contributors address such issues as the role of algorithms as co-performers, live coding practices, and discussions of the algorithmic culture as it currently exists and what it can potentially contribute society, education, and ecommerce. Chapters engage particularly with post-human perspectives - what new musics are now being found through algorithmic means which humans could not otherwise have made - and, in reciprocation, how algorithmic music is being assimilated back into human culture and what meanings it subsequently takes. Blending technical, artistic, cultural, and scientific viewpoints, this Handbook positions algorithmic music making as an essentially human activity.

**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.

**The Sound of Innovation** - Andrew J. Nelson 2015-03-06

How a team of musicians, engineers, computer scientists, and psychologists developed computer music as an academic field and ushered in the era of digital music. In the 1960s, a team of Stanford musicians, engineers, computer scientists, and psychologists used computing in an entirely novel way: to produce and manipulate sound and create the sonic basis of new musical compositions. This group of interdisciplinary researchers at the nascent Center for Computer Research in Music and Acoustics (CCRMA, pronounced “karma”) helped to develop computer music as an academic field, invent the technologies that

underlie it, and usher in the age of digital music. In *The Sound of Innovation*, Andrew Nelson chronicles the history of CCRMA, tracing its origins in Stanford's Artificial Intelligence Laboratory through its present-day influence on Silicon Valley and digital music groups worldwide. Nelson emphasizes CCRMA's interdisciplinarity, which stimulates creativity at the intersections of fields; its commitment to open sharing and users; and its pioneering commercial engagement. He shows that Stanford's outsized influence on the emergence of digital music came from the intertwining of these three modes, which brought together diverse supporters with different aims around a field of shared interest. Nelson thus challenges long-standing assumptions about the divisions between art and science, between the humanities and technology, and between academic research and commercial applications, showing how the story of a



small group of musicians reveals substantial insights about innovation. Nelson draws on extensive archival research and dozens of interviews with digital music pioneers; the book's website provides access to original historic documents and other material.

*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.

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

**Deep Learning Techniques for Music Generation** - Jean-Pierre Briot 2019-11-08

This book is a survey and analysis of how deep learning can be used to generate musical content. The authors offer a comprehensive presentation of the foundations of deep learning techniques for music generation. They also develop a conceptual framework used to classify and analyze various types of architecture, encoding models, generation strategies, and ways to control the generation. The five dimensions of this framework are: objective (the kind of musical content to be generated, e.g., melody, accompaniment); representation (the musical elements to be considered and how to encode them, e.g., chord, silence, piano roll, one-hot encoding); architecture (the structure organizing neurons, their connexions, and the flow of their activations, e.g., feedforward,

recurrent, variational autoencoder); challenge (the desired properties and issues, e.g., variability, incrementality, adaptability); and strategy (the way to model and control the process of generation, e.g., single-step feedforward, iterative feedforward, decoder feedforward, sampling). To illustrate the possible design decisions and to allow comparison and correlation analysis they analyze and classify more than 40 systems, and they discuss important open challenges such as interactivity, originality, and structure. The authors have extensive knowledge and experience in all related research, technical, performance, and business aspects. The book is suitable for students, practitioners, and researchers in the artificial intelligence, machine learning, and music creation domains. The reader does not require any prior knowledge about artificial neural networks, deep learning, or computer music.

The text is fully supported with a comprehensive table of acronyms, bibliography, glossary, and index, and supplementary material is available from the authors' website.

**An Introduction to the Creation of Electroacoustic Music** - Samuel Pellman 1994

This text aims to be accessible to students relatively inexperienced with electronic musical technology, while also sufficiently detailed for technical and musical achievement. Furthermore, it stresses the notion that, despite all the attention given to technique, the principal goal is musical expression.

**Refining Sound** - Brian K. Shepard 2013-10  
Refining Sound is a practical roadmap to the complexities of creating sounds on modern synthesizers. As author, veteran synthesizer instructor Brian K. Shepard draws on his years of experience in synthesizer pedagogy

in order to peel back the often-mysterious layers of sound synthesis one-by-one. The result is a book which allows readers to familiarize themselves with each individual step in the synthesis process, in turn empowering them in their own creative or experimental work. The book follows the stages of synthesis in chronological progression, starting readers at the raw materials of sound creation and ultimately bringing them to the final "polishing" stage. Each chapter focuses on a particular aspect of the synthesis process, culminating in a last chapter that brings everything together as the reader creates his/her own complex sounds. Throughout the text, the material is supported by copious examples and illustrations as well as by audio files and synthesis demonstrations on a related companion website. Each chapter contains easily digestible guided projects (entitled "Your Turn" sections) that focus on the

topics of the corresponding chapter. In addition to this, one complete project will be carried through each chapter of the book cumulatively, allowing the reader to follow - and build - a sound from start to finish. The final chapter includes several sound creation projects in which readers are given types of sound to create as well as some suggestions and tips, with final outcomes is left to readers' own creativity. Perhaps the most difficult aspect of learning to create sounds on a synthesizer is to understand exactly what each synthesizer component does independent of the synthesizer's numerous other components. Not only does this book thoroughly illustrate and explain these individual components, but it also offers numerous practical demonstrations and exercises that allow the reader to experiment with and understand these elements without the distraction of the other controls and modifiers. Refining Sound is

essential for all electronic musicians from amateur to professional levels of accomplishment, students, teachers, libraries, and anyone interested in creating sounds on a synthesizer.

[The Computer Music Tutorial](#) - Curtis Roads 2023

"A comprehensive overall survey of the tools and techniques used in the field of computer music, aimed at beginners as well as intermediate and advanced users"--

[Computer Music](#) - Charles Dodge 1985

This text reflects the current state of computer technology and music composition. The authors offer clear, practical overviews of program languages, real-time synthesizers, digital filtering, artificial intelligence, and much more.

**Music and Computers** - 2005

**The Computer Music Tutorial, second edition** - Curtis Roads 2023-03-21

Expanded, updated, and fully revised—the definitive introduction to electronic music is ready for new generations of students. Essential and state of the art, *The Computer Music Tutorial*, second edition is a singular text that introduces computer and electronic music, explains its motivations, and puts topics into context. Curtis Roads’s step-by-step presentation orients musicians, engineers, scientists, and anyone else new to computer and electronic music. The new edition continues to be the definitive tutorial on all aspects of computer music, including digital audio, signal processing, musical input devices, performance software, editing systems, algorithmic composition, MIDI, and psychoacoustics, but the second edition also reflects the enormous growth of the field since the book’s original publication in 1996. New chapters cover up-to-date topics like virtual analog, pulsar synthesis, concatenative synthesis, spectrum analysis

by atomic decomposition, Open Sound Control, spectrum editors, and instrument and patch editors. Exhaustively referenced and cross-referenced, the second edition adds hundreds of new figures and references to the original charts, diagrams, screen images, and photographs in order to explain basic concepts and terms. Features New chapters: virtual analog, pulsar synthesis, concatenative synthesis, spectrum analysis by atomic decomposition, Open Sound Control, spectrum editors, instrument and patch editors, and an appendix on machine learning Two thousand references support the book’s descriptions and point readers to further study Uses mathematical notation and program code examples only when necessary Twenty-five years of classroom, seminar, and workshop use inform the pace and level of the material

**A History of Mechanical Inventions -**

Abbott Payson Usher 2013-07-24

Updated classic explores importance of technological innovation in cultural and economic history of the West. Water wheels, clocks, printing, machine tools, more.

"Without peer." — American Scientist.

**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.

**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](mailto:digitalproducts-cs@mit.edu).

**The Computer Music Tutorial** - Curtis Roads 1995

This 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.

*Creating Sounds from Scratch* - Andrea Pejrolo 2017

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.

**Electric Sound** - Joel Chadabe 1997

The author covers the development of the electronic musical instrument from Thaddeus Cahill's Telharmonium at the turn of the last century to the MIDI synthesizers of the 1990s. --book cover.

**Digital Electronics** - Christopher E. Strangio 1980

Logic concepts; Boolean algebra; Combinational logic; Binary number operations; Flip-flops; Counter analysis and design; Sequential circuits; Digital circuit fault analysis; Analog-digital conversion;

Computers and microprocessors.

*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.

Synthesizer Technique - 1984

Score

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 Audio Programming Book** - Richard Boulanger 2010-10-22

An encyclopedic handbook on audio programming for students and professionals, with many cross-platform open source examples and a DVD covering advanced topics. This comprehensive handbook of mathematical and programming techniques for audio signal processing will be an essential reference for all computer musicians, computer scientists, engineers, and anyone interested in audio. Designed to be used by readers with varying levels of programming expertise, it not only

provides the foundations for music and audio development but also tackles issues that sometimes remain mysterious even to experienced software designers. Exercises and copious examples (all cross-platform and based on free or open source software) make the book ideal for classroom use. Fifteen chapters and eight appendixes cover such topics as programming basics for C and C++ (with music-oriented examples), audio programming basics and more advanced topics, spectral audio programming; programming Csound opcodes, and algorithmic synthesis and music programming. Appendixes cover topics in compiling, audio and MIDI, computing, and math. An accompanying DVD provides an additional 40 chapters, covering musical and audio programs with micro-controllers, alternate MIDI controllers, video controllers, developing Apple Audio Unit plug-ins from Csound opcodes, and

audio programming for the iPhone. The sections and chapters of the book are arranged progressively and topics can be followed from chapter to chapter and from section to section. At the same time, each section can stand alone as a self-contained unit. Readers will find *The Audio Programming Book* a trustworthy companion on their journey through making music and programming audio on modern computers.

*Software Studies* - Matthew Fuller 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.

*Csound* - Victor Lazzarini 2016-11-15  
This rigorous book is a complete and up-to-date reference for the Csound system from the perspective of its main developers and

power users. It explains the system, including the basic modes of operation and its programming language; it explores the many ways users can interact with the system, including the latest features; and it describes key applications such as instrument design, signal processing, and creative electronic music composition. The Csound system has been adopted by many educational institutions as part of their undergraduate and graduate teaching programs, and it is used by practitioners worldwide. This book is suitable for students, lecturers, composers, sound designers, programmers, and researchers in the areas of music, sound, and audio signal processing.

The Computer Music Tutorial - Curtis Roads  
1996

This text 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.

*Music: A Mathematical Offering* - Dave Benson  
2007

This book explores the interaction between music and mathematics including harmony, symmetry, digital music and perception of sound.

On the Threshold of Beauty - Kees Tazelaar  
2013

On the Threshold of Beauty' is an exciting and detailed reconstruction of the emergence of electronic music in the Netherlands. Author Kees Tazelaar, composer and head of the Institute of Sonology at the Royal Conservatoire in The Hague, grippingly relates its turbulent history from the earliest beginnings. This history begins around 1930 with the studio

of the Philips Physics Laboratory and the plans for the Philips pavilion at Expo 58 in Brussels. The goal was a lightand- sound demonstration for the general public, but the involvement of Le Corbusier, Iannis Xenakis and Edgard Varèse gave this project a highly avant-garde turn. The result, *Poème électronique*, was considered by many to be much more experimental than the music of

the research laboratory. In 1960 Philips divested itself of the studio. It was absorbed into a new studio at Utrecht University, where Gottfried Michael Koenig became artistic director in 1964. Tazelaar also looks in detail at the influence wielded by the Contact Organization for Electronic Music during this period. -- Publisher.