Introduction to audio processing

Christensen, Mads G., author

Abstrak

This textbook presents an introduction to signal processing for audio applications. The authors approach posits that math is at the heart of audio processing and that it should not be simplified. He thus retains math as the core of signal processing and includes concepts of difference equations, convolution, and the Fourier Transform. Each of these is presented in a context where they make sense to the student and can readily be applied to build artifacts. Each chapter in the book builds on the previous ones, building a linear, coherent story. The book starts with a definition of sound and goes on to discuss digital audio signals, filters, The Fourier Transform, audio effects, spatial effects, audio equalizers, dynamic range control, and pitch estimation. The exercises in each chapter cover the application of the concepts to audio signals. The exercises are made specifically for Pure Data (Pd) although traditional software, such as MATLAB, can be used. The book is intended for students in media technology bachelor programs. The book is based on material the author developed teaching on the topic over a number of years.
Presents a comprehensive introduction to audio processing for students in media technology and signal processing
Builds a foundation for audio applications based on mathematical equations, presented in a way understandable to students without a math background
Includes a full suite of classroom material including end of chapter exercises and companion Youtube video tutorials on the authors channel.