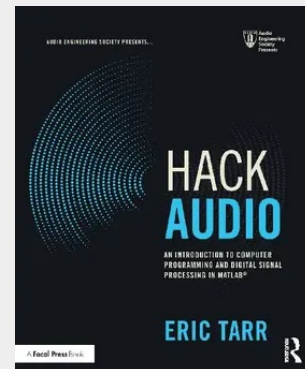


Hack Audio

An Introduction to Computer Programming and Digital Signal Processing in MATLAB

Computers are at the center of almost everything related to audio. Whether for synthesis in music production, recording in the studio, or mixing in live sound, the computer plays an essential part. Audio effects plug-ins and virtual instruments are implemented as software computer code. Music apps are computer programs run on a mobile device. All these tools are created by programming a computer. Hack Audio: An Introduction to Computer Programming and Digital Signal Processing in MATLAB provides an introduction for musicians and audio engineers interested in computer programming. It is intended for a range of readers including those with years of programming experience and those ready to write their first line of code. In the book, computer programming is used to create audio effects using digital signal processing. By the end of the book, readers implement the following effects: signal gain change, digital summing, tremolo, auto-pan, mid/side processing, stereo widening, distortion, echo, filtering, equalization, multi-band processing, vibrato, chorus, flanger, phaser, pitch shifter, auto-wah, convolution and algorithmic reverb, vocoder, transient designer, compressor, expander, and de-esser. Throughout the book, several types of test signals are synthesized, including: sine wave, square wave, sawtooth wave, triangle wave, impulse train, white noise, and pink noise. Common visualizations for signals and audio effects are created including: waveform, characteristic curve, goniometer, impulse response, step response, frequency spectrum, and spectrogram. In total, over 200 examples are provided with completed code demonstrations.

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103,30 €

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Lieferfrist: bis zu 10 Tage

Artikelnummer: 9781138497559

Medium: Buch

ISBN: 978-1-138-49755-9

Verlag: Routledge

Erscheinungstermin: 03.07.2018

Sprache(n): Englisch

Auflage: 1. Auflage 2018

Serie: Audio Engineering Society Presents

Produktform: Kartoniert

Gewicht: 913 g

Seiten: 492

Format (B x H): 191 x 235 mm

