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RECOGNITION 250 -- PART V SPEECH FEATURES -- CHAPTER 19 THE AUDITORY SYSTEM AS A FILTER BANK 263 -- CHAPTER 20 THE CEPSTRUM AS A SPECTRAL ANALYZER 277 -- CHAPTER 21 LINEAR PREDICTION 286 -- PART VI AUTOMATIC SPEECH RECOGNITION -- CHAPTER 22 FEATURE EXTRACTION FOR ASR 301 -- CHAPTER 23 LINGUISTIC CATEGORIES FOR SPEECH RECOGNITION 319 -- CHAPTER 24 DETERMINISTIC SEQUENCE RECOGNITION FOR ASR 337 -- CHAPTER 25 STATISTICAL SEQUENCE RECOGNITION 350 -- CHAPTER 26 STATISTICAL MODEL TRAINING 364 -- CHAPTER 27 DISCRIMINANT ACOUSTIC PROBABILITY ESTIMATION 381 -- CHAPTER 28 ACOUSTIC MODEL TRAINING: FURTHER TOPICS 394 -- CHAPTER 29 SPEECH RECOGNITION AND UNDERSTANDING 416 -- PART VII SYNTHESIS AND CODING -- CHAPTER 30 SPEECH SYNTHESIS 431 -- CHAPTER 31 PITCH DETECTION 455 -- CHAPTER 32 VOCODERS 473 -- CHAPTER 33 LOW-RATE VOCODERS 493 -- CHAPTER 34 MEDIUM-RATE AND HIGH-RATE VOCODERS 505 -- CHAPTER 35 PERCEPTUAL AUDIO CODING 531 -- PART VIII OTHER APPLICATIONS -- CHAPTER 36 SOME ASPECTS OF COMPUTER MUSIC SYNTHESIS 553 -- CHAPTER 37 MUSIC SIGNAL ANALYSIS 567 -- CHAPTER 38 MUSIC RETRIEVAL 581. CHAPTER 39 SOURCE SEPARATION 59 -- CHAPTER 40 SPEECH TRANSFORMATIONS 617 -- CHAPTER 41 SPEAKER VERIFICATION 633 -- CHAPTER 42 SPEAKER DIARIZATION 644.

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### Sommario/riassunto

Helps readers develop an intuitive understanding of audio signal processing. Acclaimed for its breadth of coverage as well as its clear, accessible presentation, *Speech and Audio Signal Processing* examines how machines and humans process audio signals, with an emphasis on speech and music. It begins with basic principles and then explains how these principles set the foundation for a wide range of applications. Moreover, the book is organized into a series of short chapters, offering readers a succinct overview of the range of topics that together represent the current state of knowledge in the field. This Second Edition brings the book fully up to date with the explosive growth in audio processing technology, including the latest advances in digital music processing and distribution. New topics include: . Psychoacoustic audio coding, examining MP3 and related audio coding schemes that are based on the psychoacoustic masking of quantization noise . Music transcription, explaining how notes, beats, and chords can be automatically derived from music signals . Music information retrieval, exploring audio-based genre classification, artist and style identification, and similarity estimation . Audio source separation, describing multi-microphone beamforming, blind source separation, and perception-inspired techniques Throughout the book, the authors present both human and machine strategies for accomplishing audio processing tasks. Readers will discover that, in many cases, human strategies can provide the inspiration for the development of machine strategies. *Speech and Audio Signal Processing* is recommended for anyone who needs to understand the technologies underlying some of today's most cutting-edge applications, including speech recognition, audio compression, music synthesis, and diarization.

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