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MATLABreg; Primer for Speech Language Pathology and Audiology

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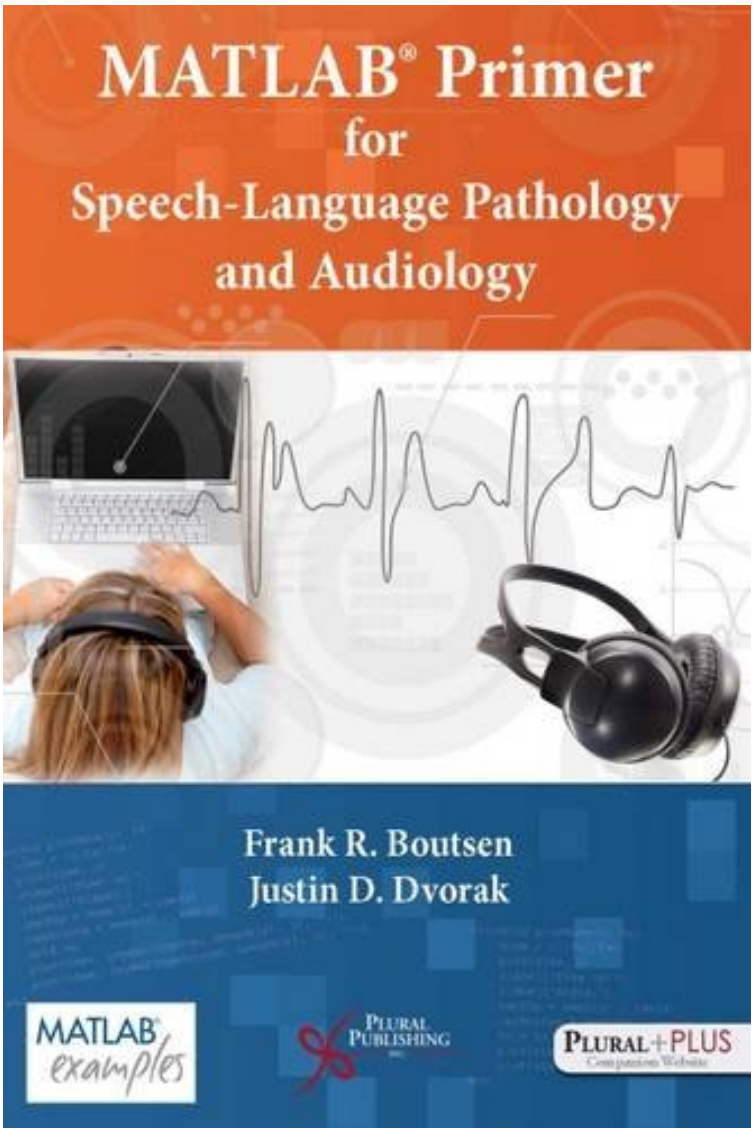

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Frank R. Boutsen, Justin D. Dvorak : MATLABreg; Primer for Speech Language Pathology and Audiology before purchasing it in order to gage whether or not it would be worth my time, and all praised MATLABreg; Primer for Speech Language Pathology and Audiology:

MATLABreg; Primer for Speech Language Pathology and Audiology provides training and access to MATLABreg;, the computational language developed by MathWorksreg;. While there are MATLABreg; textbooks and manuals written for the field of engineering, there are no textbooks targeting allied heath disciplines, particularly speech-language pathology and audiology. Research and practice in this field can greatly benefit from quantification and automation in data management, a domain that is increasingly labor-intensive. The text anticipates and promotes increased reliance on quantification and automation in the fields of speech-language pathology and audiology. This book is intended for students, practitioners, and researchers in speech-language pathology and audiology who wish to increase their productivity by incorporating and automating common research procedures and data-analysis calculations, or who wish to develop new tools and methods for their own paradigms and data processing. It assumes no prior knowledge of programming, but requires the reader to have a grasp of basic computer skills, such as managing folders, moving files, and navigating file paths and folder structures. Content and style are chosen so as to lower the threshold for an audience who has limited training in computer science. Concepts are presented in a personalized writing style (almost a dialogue with the reader), along with a didactic format similar to programmed instruction, using applications and work assignments that are concrete and manageable. Key Features: Provides a comprehensive introduction to the user in an effort to limit background needed to follow the content Includes several mathematical review appendices Exercises for the student to apply skills learned in laboratory and clinical applications Supplies many examples of MATLABreg; code and makes use of several datasets

This much-needed book opens the door to the laboratory, and guides the user through the basic concepts needed to get started on a path toward creative problem solving. Although intended for students, researchers, and clinicians in Speech Pathology and Audiology, this book is an excellent introduction for anyone wanting to learn to use MATLABreg;. I have been a MATLABreg; user for about two decades, and utilize it in nearly every aspect of my research and teaching. It has been an ideal environment for developing computational models of speech production, algorithms for processing acoustic, kinematic, and air flow signals, as well as for animating time-varying quantities such as a spectra and vocal tract configurations. I appreciate the difficulties, however, of teaching others to use MATLABreg;, especially in the absence of a programming background. This book was written to address exactly this niche, and I believe it definitely succeeds in doing so. --From the Foreword by Brad H. Story, Professor and Associate Department Head, Speech, Language, and Hearing Sciences, University of ArizonaNot only is this a great introduction to MATLAB, it also illustrates how MATLAB can be used for stimuli creation and presentation, in addition to data collection and analysis. As part of stimuli creation, the authors show how to create various type of speech signals such as generate filter speech, speech in noise signals, gated speech, etc. In terms of data analysis techniques, it provides thorough, step-by-step instructions on how to measure various aspects of a recording including formants, voice quality, prosody, intensity envelopes, etc. One strength of this book is the clearly displayed commands that are necessary to perform a task in MATLAB. This allows readers to copy the commands into MATLAB and see how the desired output is achieved. Another unique feature is the inclusion of exercises, which are dispersed throughout the book, that provide readers with opportunities to apply some of the skills that they have just read about. For readers who are interested in the applicability of MATLAB to speech-language pathology and audiology, this book is highly recommended. The authors provide a detailed introduction to MATLAB, clear instructions on various signal processing techniques, and thorough descriptions of applications for data analysis and the use of MATLAB for data management. --Nicholas Stanley, BA, University of South Alabama, in Doody's, September 2016About the AuthorFrank R. Boutsen, PhD, CCC-SLP, is an associate professor in speech-language pathology in the Department of Communication Sciences and Disorders at the University of Oklahoma Health Sciences Center. He is the director of the Motor Speech and Prosody Research Laboratory. He holds a master s degree in psychology and a doctorate in speech pathology. He was a post-doctoral fellow in medical speech pathology at Mayo Clinic, Rochester. He has published numerous papers on neurogenic speech disorders and prosody.Justin D. Dvorak, MS, is a doctoral candidate in the Department of Communication Sciences and Disorders at the University of Oklahoma Health Sciences Center. He also serves as a research consultant at the Motor Speech and Prosody Research Laboratory. He has presented at both the national and international levels on the computer automation of experimental paradigms and quantitative techniques for natural language and biosignal processing. His research interests include signal statistics and speech analysis.