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Revised Selected Papers

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Preface

We present in this volume a collection of revised selected papers from the ISCA Tutorial and Research Workshop on Nonlinear Speech Processing (NOLISP 2007) held in Paris, France, 22–25 May, 2007. NOLISP 2007 was organized by the University Pierre and Marie Curie (UPMC) with the generous support of ISCA (International Speech Communication Association), EURASIP and the IEEE. NOLISP 2007 was the first follow-on workshop to a series of three earlier events related to nonlinear speech processing, that were organized within the framework of the European COST action 277 Nonlinear speech processing (2001–2005). The financial support of ISCA enabled the attendance of leading researchers from various parts of the world.

The exciting field of speech processing has witnessed tremendous development over the past 20 years or so, thanks to both technological progress and to the growing focus of research on a number of key application areas. However, some specificities of the speech signal are still not well addressed by the currently available models. Hence, new nonconventional models and processing techniques need to be investigated in order to foster and/or accompany future progress, even if they do not match immediately the level of performance and understanding of the current state-of-the-art approaches.

The purpose of NOLISP is to present and discuss novel ideas, work and results related to such alternative techniques for speech processing, which depart from mainstream approaches. It declared its intent to be an interdisciplinary forum, intertwining research in different fields of speech processing with its growing applications in everyday practice.

One of the special characteristics of the NOLISP volumes is that the authors usually propose new improvements for speech processing by drawing inspiration from other exciting fields including, amongst others, statistical signal processing, pattern classification, multi-modal processing, perceptual-based criteria, auditory processing and machine learning-based approaches.

This volume contains a collection of revised and selected papers presented at NOLISP 2007. After a thorough review process, 24 papers were accepted for publication, including the contribution of three invited speakers. A total of 8 sessions containing 32 papers were accepted for presentation, covering specific aspects such as speaker recognition, speech analysis, voice pathologies, speech recognition, speech enhancement, audio and visual speech processing and applications.

In this book, the papers have been divided into the following sections:

– Nonlinear and Nonconventional Techniques
– Speech Synthesis
– Speaker Recognition
– Speech Recognition

- Speech Analysis
- Exploitation of nonlinear techniques

Finally, we would like to express our gratitude to members of the NOLISP Organizing Committee, and to all the people who participated in the event (delegates, invited speakers, scientific committee members). The editors would also like to address a special mention to the people who helped in the peer-review process as special or additional reviewers.

October 2007

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Organization

NOLISP 2007 was organized by the Institute of Intelligent Systems and Robotics (CNRS FRE2507), University Pierre and Marie Curie (Paris-6).

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Table of Contents

Speech Recognition

Speech Analysis

Exploitation of non-linear techniques