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Verbal and Nonverbal Features of Human-Human and Human-Machine Interaction

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Preface

This book is dedicated to the dreamers, their dreams, and their perseverance in research work.

This volume brings together the selected and peer-reviewed contributions of the participants at the COST 2102 International Conference on Verbal and Nonverbal Features of Human–Human and Human–Machine Interaction, held in Patras, Greece, October 29–31, 2007, hosted by the 19th IEEE International Conference on Tools with Artificial Intelligence (ICTAI 2008).

The conference was sponsored by COST (European Cooperation in the Field of Scientific and Technical Research, www.cost.esf.org) in the domain of Information and Communication Technologies (ICT) for disseminating the advances of the research activity developed within COST Action 2102: “Cross-Modal Analysis of Verbal and Nonverbal Communication” (www.cost2102.eu).

COST Action 2102 is a network of about 60 European and 6 overseas laboratories whose aim is to develop *“an advanced acoustical, perceptual and psychological analysis of verbal and non-verbal communication signals originating in spontaneous face-to-face interaction, in order to identify algorithms and automatic procedures capable of identifying the human emotional states. Particular care is devoted to the recognition of emotional states, gestures, speech and facial expressions, in anticipation of the implementation of intelligent avatars and interactive dialogue systems that could be exploited to improve user access to future telecommunication services”* (see COST 2102 Memorandum of Understanding (MoU) www.cost2102.eu).

The main theme of the conference was to foster existing and growing connections between the emerging field of technology devoted to the identification of individuals using biological traits and the fundamentals of verbal and nonverbal communication which include facial expressions, tones of voice, gestures, eye contact, spatial arrangements, patterns of touch, expressive movement, cultural differences, and other “nonverbal” acts.

The research topics proposed by the conference were particularly computer science oriented in order to be in theme with the call for features of human–computer interaction. The contributors to this volume are leading authorities in their respective fields. We are grateful to them for accepting our invitation and making (through their participation) the conference such a worthwhile event.

The book is broadly divided into two scientific areas according to a thematic classification, even though all the areas are closely connected and all provide fundamental insights for cross-fertilization of different disciplines.

The first area, “Static and Dynamic Processing of Faces, Facial Expressions, and Gaze,” deals with the theoretical and computational issue of defining algorithms, programming languages, and determinist models for recognizing faces, emotions in faces, for synthesizing facial expressions and exploiting facial information during the interaction with interactive dialogue systems and intelligent avatars.

The second area, “Emotional Speech Synthesis and Recognition: Applications to Telecommunication Systems,” underlines the importance of vocal emotional communication and reports on advanced experiments for the recognition and synthesis of emotional and non-emotional vocal expressions.

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Special appreciation goes to Tina Marcella Nappi of the International Institute for Advanced Scientific Studies, whose help in the organization of this volume was invaluable.

Finally, we are most grateful to all the contributors to this volume and all the participants in the COST 2102 International Conference for their cooperation, interest, enthusiasm and lively interactions, making it a scientifically stimulating gathering and a memorable personal experience.

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