Introduction

‘tis true; there is magic in the web of it
(W. Shakespeare, Othello, Act III)

In the last few years, there has been a veritable explosion of computer- and web-based teaching tools for speech science education. This development has been spurred by the ever-wider availability of computer facilities within speech science laboratories and by the increasing use of the web for the production and dissemination of teaching materials.

The topic of innovations in teaching for speech science education has long been a focus of interest of the Socrates Thematic Network in Speech Communication Sciences which links up 102 Institutes from 22 European countries. The European Speech Communication Association (ESCA) has also promoted excellence in teaching for many years via special sessions on education at recent Eurospeech conferences and via the setting up of a Special Interest Group in Education. Both these organisations are co-sponsors of the Tutorial and Research Workshop on Method and Tool Innovations in Speech Science Education (MATISSE), which took place at University College London and the Centre for the Magic Arts on 16-17 April 1999. The aim of this workshop was to bring together developers and users of such materials in order to foster collaborations and promote excellence in teaching. The rapidity of modern speech processing and the transformations involved in the manipulation and presentation of visual images make the newly opened Centre for the Magic Arts an entirely appropriate venue for this workshop!

This Proceedings volume contains all 33 contributions presented at this workshop. These include keynote presentations and papers presented at six oral sessions and at a demonstration session. Around 85 participants from 23 countries worldwide attended this workshop.

We wish to acknowledge the support of the European Speech Communication Association, generous financial support from the Socrates Thematic Network in Speech Communication Sciences and the help of many colleagues within the Department of Phonetics and Linguistics, UCL. The International Scientific Committee contributed valuable time in reviewing the submitted abstracts and in shaping the final programme. We have been gratified to see that the topic of innovation in speech science education has attracted such an eminent and varied set of participants. We hope that all will have left the workshop with new ideas and new friends.

Welcome to London!

Evelyn Abberton     Gerrit Bloothooft     Valerie Hazan     Mark Huckvale
Table of Contents

Design, development and evaluation of computer-assisted learning for Speech Science education ................................................................. 9
Robert Berkovitz

Interactive Phonetics, virtually ................................................................. 17
Julie Carson-Berndsen & Dafydd Gibbon

Interactive learning in speech and hearing ........................................... 21
Stuart Wrigley, Martin Cooke & Guy Brown

Using Java to develop interactive learning work-bench for speech analysis basics on the World-Wide Web .................................................. 25
Andrzej Drygajlo, Guy Lafontaine

InterPHACE - Internetworked links for phonetic analysis in clinical education ....29
Janet Mackenzie Beck, Alistair Lawson, Ineke Mennen

HI-SIM v1.0: Hearing impairment simulation on a CD-ROM ....................... 33
Pentti Körkkö, Kerttu Huttunen, Martti Sorri

The Project for the development of multimedia methods in logopedics and phoniatrics (PUMP)................................................................. 37
V. Lyberg Åhlander, Eva Wigforss, R. Rydell, Eva Falk-Nilsson

European virtual university - ODL voice course ...................................... 41
Eva Wigforss

New tools for interactive speech and language training: Using animated conversational agents in the classroom of profoundly deaf children ..... 45
Ron Cole, Dominic Massaro, Jacques de Villiers, Brian Rundle, Khaldoun Shobaki, Johan Wouters, Michael Cohen, Jonas Beskow, Patrick Stone, Pamela Connors, Alice Tarachow, Daniel Solcher

The set of exercises in digital speech processing ....................................... 53
Jan Uhlir

Human speech production based on a linear predictive vocoder – an interactive tutorial ................................................................. 57
Klaus Fellbaum, Jörg Richter

An Interactive Course on Speech Synthesis ............................................. 61
Rüdiger Hoffmann, Ulrich Kordon, Steffen Kürbis, Bettina Ketzmerick, Klaus Fellbaum

Hypertext atlas of speech sounds ............................................................. 65
Anne Bonneau, Yves Laprie, Jacqueline Vaissiere

Speech sciences and visually impaired students ........................................ 69
Ivan Kopecek

An interactive course in spectrogram reading ......................................... 73
Tim Carmell, John-Paul Hosom, Ron Cole

- 2 -
Speech pattern element analysis and display - "Lx Speech Studio" .......................... 77
Evelyn Abberton, Adrian Fourcin, Xinghui Hu, Colin Bootle, David Miller

An integrated multi-media package for teaching clinical phonetics and
linguistics ..................................................................................................................... 81
Sara Howard, Mick Perkins, Rod Nicolson

A computer-based tutorial on models of speech perception ................................. 85
Francesco Cutugno, Cécile Fougeron

Snorri, a software for speech sciences ................................................................. 89
Yves Laprie

WWWSigTranscribe - Annotation via the WWW .................................................. 93
Christoph Draxler

Developments in speech sciences curricula ........................................................... 97
Peter Roach

Phonetics education in Europe ............................................................................. 101
Valerie Hazan, Wim van Dommelen

Phonetics teaching objectives in Polish universities ......................................... 105
Malgorzata Bryndal

Teaching digital speech processing for telecommunications ............................. 109
Mircea Giurgiu

Using the CSLU toolkit for practicals in spoken dialogue technology .............. 113
Michael Mc Tear

Laboratory course on speech processing using KHOROS development
environment ............................................................................................................... 117
Zdravko Kacic

Teaching and learning through visualised speech processing experiments ...... 121
Jan Nouza

Using hypermedia for the teaching of phonetics and phonology ...................... 125
Giuliana Garzone, Francesca Santulli

A prosodic module for self-learning activities ...................................................... 129
Rodolfo Delmonte

Criteria for designing interactive exercises to learn French intonation ............ 133
Christine Fiandino, Phil Green, Annie Rouxeville

Experiences of large scale implementation of speech analyzing tools in
learning Swedish as a second language ................................................................. 137
Håkan Larsson

Web-based educational tools for speech technology .......................................... 141
Kåre Sjölander, Jonas Beskow, Joakim Gustafson, Rolf Carlson, Björn Granström
Tutorial design for Web-based teaching and learning .......................... 145
Chris Bowerman, Anders Eriksson, Mark Huckvale, Mike Rosner, Mark Tatham, Maria Wolters

Author Index ........................................................................................................... 149
Author Index

Abberton, A. 77
Beck, J. 29
Berkovitz, R. 9
Beskow, J. 45, 141
Bonneau, A. 65
Bootle, C. 77
Bowerman, C. 145
Brown, G. 21
Bryndal, M. 105
Carlson, R. 141
Carmell, T. 73
Carson-Berndsen, J. 17
Cohen, M. 45
Cole, R. 45, 73
Connors, P. 45
Cooke, M. 21
Cutugno, F. 85
Delmonte, R. 129
Dommelen, W. van 101
Draxler, C. 93
Drygajlo, A. 25
Eriksson, A. 145
Falk-Nilsson, E. 37
Fellbaum, K. 57, 61
Fiandino, C. 133
Fourcin, A. 77
Garzone, G. 125
Gibbon, D. 17
Giurgiu, M. 109
Granström, B. 141
Green, P. 133
Gustafson, J. 141
Hazen, V. 101
Hoffman, R. 61
Hosom, J.P. 73
Hu, X. 77
Huckvale, M. 145
Huttunen, K. 33
Kacie, Z. 117
Ketzmerick, B. 61
Kopecek, I. 69
Kordon, U. 61
Körkkö, P. 33
Kürbis, S. 61
Lafontaine, G. 25
Laprie, Y. 65, 89
Larsson, H. 137
Lawson, A. 29
Lyberg Åhlander, V. 37
Massaro, D. 45
McTear, M. 113
Mennen, I. 29
Miller, D. 77
Nicolson, R. 81
Nouza, J. 121
Perkins, M. 81
Richter, J. 57
Roach, P. 97
Rosner, M. 145
Rouxeville, A. 133
Rundle, B. 45
Rydell, R. 37
Santulli, F. 125
Shobaki, K. 45
Sjölander, K. 141
Solcher, D. 45
Stone, P. 45
Tarachow, A. 45
Tatham, M. 145
Uhler, J. 57
Vaissiere, J. 65
Villiers, J. de 45
Wigforss, E. 37, 41
Wolters, M. 145
Wouters, J. 45
Wrigley, S. 21