

Mark Huckvale - Curriculum Vitae

<http://www.phon.ucl.ac.uk/home/mark>

Current Position

1990-

Senior Lecturer in Speech Sciences, Phonetics & Linguistics, University College London

1989-

Technical Director, Marquesa Search Systems Ltd

Previous Positions

1986-1990

SERC Advanced Research Fellow, UCL

1983-1986

Research Assistant, UCL

1979-1983

Software Engineer, Scicon Consultancy International.

1976-1979

Postgraduate Research Student, UCL

Qualifications

1984 PhD University of London

"An Interactive Speech Pattern Audiometer"

1976 BSc (Hons) University of Warwick

Physics

Experience

for PhD:

Designed, constructed and evaluated a micro-processor controlled audiometer system for the assessment of hearing ability using tests presented at comfortable listening levels.

at Scicon:

Systems programmer for team developing small business systems. Various projects in defence area. Project leader for bi-lingual, English/Arabic database system. Consultant on Patent Office automated trademark search system.

at UCL: (as research assistant)

Development of architecture for automatic speech recognition. Design of representational language for speech knowledge for use in recognition and synthesis. Software development of speech analysis workbench.

at UCL: (as research fellow)

Methods for modelling variability of speech. Feature detectors for phonetic characteristics of speech. Connectionist architectures and knowledge representation for speech recognition.

at UCL: (as lecturer/senior-lecturer)

Teaching in speech acoustics, perception & hearing, connectionism, digital signal processing, computer speech processing, experimental phonetics, programming. Research in speech recognition through non-linear phonological analysis, speech synthesis, language modelling.

as Consultant:

Consultant to Patent Office and Computer Sciences Ltd on design and implementation of Trademarks database search system (using ICL CAFS and fuzzy retrieval techniques).

at Marquesa Search Systems:

Design and implementation of CD-ROM publishing software. Database design and implementation for CD-ROM trademarks product 'Marquesa'. Image processing and storage of

trademark devices for CD-ROM publishing. PC software for CD-ROM search and image decompression/display.

Grants Held

1983-1996

'Acoustic Modelling of Phonetic Segments', MoD University Research Agreement with RSRE, £100k.

1986-1991

'Fundamental relations between acoustic and phonetic descriptions of speech', SERC Advanced Fellowship, £125k.

1990-1993

(with A.Faulkner and S.Rosen) 'Computational Modelling of Aspects of Speech Perception', MRC Cognitive Science Initiative, £150k.

1996-1997

(with S.Greenbaum) 'Development of an automatic parsing system', EPSRC £176k

1997-2000

(with J.House) 'Integrated prosodic approach to speech synthesis', EPSRC £190k

1997-2000

(with V.Hazan) 'Automatic enhancement of speech', EPSRC £150k

1998-2001

'Enhanced Language Modelling', EPSRC £160k

Other Activities

1987-1993

Editor, Institute of Acoustics Speech Group Newsletter - 'Speakeasy'.

1991-1993

UK Academic representative, Speech and Language Technology Club.

1997-1999

European Co-ordinator for working group on Computer Aided Learning in Socrates thematic network on speech communication.

Recent Publications

M.Huckvale, (1998) "Opportunities for Re-convergence of Engineering and Cognitive Science Accounts of Spoken Word Recognition", Proc. IOA Conference Speech and Hearing, Windermere, November.

S. Hawkins, J. House, M. Huckvale, J. Local, R. Ogden, (1998) "ProSynth: An integrated prosodic approach to device-independent, natural-sounding speech synthesis", Proc. ICSLP, Sydney.

A. Fang, J. House, M. Huckvale, (1998) "Investigating the syntactic characteristics of English tone units", Proc. ICSLP, Sydney.

V. Hazan, A. Simpson, M. Huckvale, (1998) "Enhancement techniques to improve the intelligibility of consonants in noise: speaker and listener effects", Proc. ICSLP, Sydney.

Chung, H. & Huckvale, M. (1999) "Modeling of Temporal Compression in Korean". In Harvard Studies in Korean Linguistics VIII--Proceedings of the 1999 Harvard International Symposium on Korean Linguistics, 16 July-18 July 1999, Cambridge, U.S.A. Cambridge: Department of Linguistics, Harvard University.

M.Huckvale, C. Bowerman, A. Eriksson, M. Rosner, M. Tatham, M. Wolters, (1999) "Computer Aided Learning and use of the Internet", in The Landscape of Future Education in Speech Communication Sciences: 3 Recommendations, G. Bloothoof et al. (eds.), Utrecht: OTS Publications.

Chung, H., Huckvale, M. & Kim, K. (1999) "A New Korean Speech Synthesis System and Temporal Model". In Proceedings of 16th International Conference on Speech Processing, 18 Aug-20 Aug, Seoul, Korea, vol.1, 203-208.

Bowerman, C., Eriksson, A., Huckvale, M., Rosner, M., Tatham, M. & Wolters, M., (1999) "Criteria for Evaluating Internet Tutorials in Speech Communication Sciences", Proc. EuroSpeech-99, Budapest, pp 2455-2458

M.Huckvale, (1999) "Representation and processing of linguistic structures for an all-prosodic synthesis system using XML", Proc. EuroSpeech99, Budapest, Hungary.

Chung, H., Kim, K. & Huckvale, M. (1999) "Consonantal and Prosodic Influences on Korean Vowel Duration". In Proceedings of EuroSpeech99, Budapest, Hungary.

Fang, A.C. and M. Huckvale. (2000) "Enhanced Language Modelling with Phonologically Constrained Morphological Analysis". In Proceedings of International Conference on Acoustics and Speech Signal Processing, Istanbul, Turkey, 5-9 June.

Ogden, R., Hawkins, S., House, J., Huckvale, M., Local, J., Carter, P., Dankovicova, J., Heid, S., (2000) "ProSynth: an Integrated Prosodic Approach to Device-Independent Natural-Sounding Speech Synthesis", in Computer Speech and Language, 14, 177-210.

Fang, A.C., Huckvale, M.A., (2000) "Out of vocabulary rate reduction through dispersion based lexicon acquisition", Literary and Linguistic Computing, Vol. 15, No. 3, 2000. pp 251-263

M.Huckvale, (2001) "The Use and Potential of Extensible Mark-Up (XML) in Speech Generation", in Keller et al, Improvements in Speech Synthesis, Wiley.

Huckvale, M., Fang, A., (2001) "Experiments in apply morphological analysis in speech recognition and their cognitive explanation", IOA Workshop on Innovation in Speech Processing, Stratford-on-Avon, May.

Huckvale, M., Hunter, G., (2001) "Learning on the job: the application of machine learning within the speech decoder", IOA Workshop on Innovation in Speech Processing, Stratford-on-Avon, May.

Huckvale, M., Fang, A., (2002) "Using Phonologically-Constrained Morphological Analysis in Speech Recognition", Computer Speech and Language, to appear.

Huckvale, M., (2002) "Speech Synthesis, Speech Simulation and Speech Science", Proc. International Conference on Speech and Language Processing, Denver, to appear.

Huckvale, M., (2002) "The Reliability of the ITU-P.85 Standard for the Evaluation of Text-to-Speech Systems", Proc. International Conference on Speech and Language Processing, Denver, to appear.