

# Nick Campbell (PI) CV

## NAME AND CONTACT DETAILS

Nick CAMPBELL, Stokes Research Professor, CLCS, Trinity College, Dublin 2, Ireland

## CAREER PROFILE (Education and Employment)

**PhD:** Sussex University, U.K. Department of Experimental Psychology. Completed in September 1992, degree conferred June 1993. Thesis title: “*Multi-level Timing in Speech*”, Supervisor: Dr. S. D. Isard, Examiner: Prof C. J. Darwin.

**M.A. (with distinction):** Lancaster University, U.K. 1987. Department of Linguistics and Modern English Language. Thesis Title: “*Prosody control in English speech synthesis*”, Supervisors Dr. E. J. Briscoe, Dr. E. G. Knowles.

**First degree:** Bristol University, St. Paul’s College, U.K. 1973, Teacher’s Certificate in English Language & Psychology.

**Currently:** Stokes Research Professor, University of Dublin, Trinity College (since 10/2008)

4/06 - 12/08 Expert Researcher, National Institute of Information and Communications Technology, (NiCT) Kyoto, Japan

4/06 - 12/08 Chief Researcher, ATR Spoken Language Communication Research Labs

4/05 - 3/06 Chief Researcher, Cognitive Media Informatics, ATR Media Info Science Labs

9/04 - 3/07 Research Director, SCOPE (Processing Dialogue Flow)

4/04 - 3/05 Project Leader, ATR Network Informatics Labs, Kyoto, Japan

4/01 - 3/04 Project Leader, ATR Human Information Science Labs, Kyoto, Japan

4/00 - 3/05 Research Director, JST/CREST (Expressive Speech Processing project)

4/00 - 3/01 Supervisor, ATR Spoken Language Translation Research Labs, Kyoto, Jpaan

4/99 - 9/08 Visiting Professor, Kobe University. Grad Inst of Comm Science, Japan.

4/98 - *now* Visiting Professor NAIST Grad Inst, School of Information Systems, Japan

9/97 - 3/00 Head of Department 2, ATR Interpreting Telecommunications Research Labs

9/94 - 8/97 Supervisor, ATR Interpreting Telecommunications Research Labs, Japan

4/92 - 9/92 Invited Researcher, AT&T Bell Labs, New Jersey, USA

9/91 - 8/94 Invited Researcher, ATR Interpreting Telephony Research Labs, Japan

9/90 - 8/91 Senior Linguist, Edinburgh Uni., Centre for Speech Technology Research

9/87 - 8/90 Research Fellow, IBM UK Scientific Centre

9/85 - 8/87 Masters degree Lancaster University

9/83 - 8/85 Director of Studies, Ministry of Defence Language Institute, Kuwait

9/81 - 8/83 Director of Studies, Kuwait Oil Company Training Centre

9/75 - 8/81 Teacher of EFL in Japan (International Language Centre, Osaka)

9/73 - 7/75 Teacher of English in State Secondary School, Ealing, London, UK.

## DETAILS OF MOST RELEVANT RESEARCH FUNDING AS LEAD

1. ATR ITRL (as Head of Department 2, I was responsible for one quarter of the entire ITRL Lab's budget of approximately 2000Myen/year (dollar equivalent: 20 million/yr))
2. JST CREST Speech Processing (100Myen/yr, 4/00-3/05) (\$ equiv: 5 million over 5 years)
3. SCOPE Dialogue flow Processing (20Myen/yr, 4/04-3/07) (\$ equiv: 600k over 3 years)
4. JSPS Intl Research (South Africa) (2.5Myen/yr, 4/06-3/08) (\$ equiv: 50k over 2 years)
5. Spoken Dialogue Processing (2.5Myen/yr, 4/05-3/08) (\$ equiv: 100k over 4 years)
6. Nonverbal Processing (5Myen/yr, 4/07-3/11) (\$ equiv: 200k over 4 years)

## HISTORY OF MENTORING AND SUPERVISION

As Visiting Professor, Kobe University: 2 PhD graduates, As Visiting Professor, NAIST: 15 Masters graduates, 2 PhDs, As Department Head, ATR: 20 PostDocs, Currently 1 PhD candidate (just recently moved to Trinity)

## INNOVATION/COMMERCIALISATION ACTIVITY

*Patents:* Speech Indexing for Resequencing Synthesis(1996), CHATR (registered as a trademark) (1997), Multilingual Speech Synthesis (1998), Speech Database Design (1999), Speech Synthesiser Apparatus (2000), Spontaneous Speech Synthesis (2003), Speech Parameter Estimation (2003), Speech Synthesis Selection Method (2004), Input method for conversational speech synthesis (2005), Method for detecting affect in conversational speech (2006), Method for extracting speaking style information from running speech (2006), Method for using a midi keyboard for speech synthesis (2006), Method for combining visual and auditory information for speech understanding (2007) ... .. (n=22)

*Commercial Product* - CHATR Speech Synthesis, Licensed to AT&T, NTT, Omron, ....

## OTHER INFORMATION AS APPROPRIATE (e.g. invited presentations.)

Keynotes: LREC 2004, HLT 2005, PLM 2005, TC-Star 2006, ISTLC 2006, MLMI 2007

Organising Committees: Computing Prosody Intl w/s (Japan) 1991 (OrgComm) / 3rd ESCA/COCOSDA Speech Synthesis w/s (Convenor) / ASA Berlin sp.ssess Speech Synthesis / COCOSDA Speech Synthesis Working Group (convenor) / ESCA ETRW on Speech & Emotion (OrgComm) / Oriental COCOSDA Steering Committee member / ISCA Speech Synth SIG (Vice Chair) / ACII03(Orgcomm) / VOQUAL Voice Quality (Geneva 2003)(Orgcomm) / Eurospeech 2003 sp.ssess Expressive Speech Processing / JST/CREST Int'l w/s on Expressive Speech (Kobe 2003)(Chair) / Speech Prosody 2004 (Vice Chair) / Oriental COCOSDA 2004, India (OrgCom) / ISCA sp.ssess on Speech & Affect (Interspeech 2004) (convenor) / ACII Affective Computing & Intelligent Interaction, Beijing 2005 (cochair) / Oriental COCOSDA 2005, Bali (OrgCom) / Language Resources & Evaluation LREC2006 (panel chair) / ACII2007 (publicity chair) / Humaine Association (executive comm member) 2007-2011

Affiliations: Guest Editor, IEEE Trans Sp & Audio Special Issue on Expressive Speech Synthesis (11/45/ 06) / Editorial Board, Language Resources and Evaluation (11/04-) / Member of the Editorial Board, *Phonetica* (11/03 - 03/04) / Associate Editor, *Language & Speech* (12/99-) / Associate Editor, *Journal of the Phonetic Society of Japan* (12/00 - present) / Associate Editor *IEEE Trans Sp & Audio*(10/99 -10/04) / Guest Editor *IEEE Trans SP Special Issue on Speech Synthesis* (2001) / ISCA Speech Synthesis SIG Vice Chairman, ILO (11/98-) / ISCA Liaison Officer sProSIG / (Speech Prosody SIG) (9/00-) / External Expert, EC, Humaine NoE. (2006) / DISC Advisory Panel (9/97 - 8/99) / SpSynth WG Convenor COCOSDA (9/95 - 8/00) / Secretary COCOSDA (9/91-present) / adviser CNGL CSET /...

<b>SECTION 2</b> Publication Listing (up to three pages maximum)
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**Journal Papers (n=27):** **1.** Differences in the speaking styles of a Japanese male according to interlocutor; showing the effects of affect in conversational speech, *International Journal of Computational Linguistics and Chinese Language Processing*, pp.1-16, vol. 11, no. 1 (2007) on May 3, 2007. **2.** \*The Role and Use of Speech Gestures in Discourse *Archives of Acoustics*, Warsaw, Vol 32, N.4, 803-814, 2007. **3.** Campbell, N., Hamza, W., Hoegge, H., Tao, J., Bailly, G., Editorial Special Section on Expressive Speech Synthesis, *IEEE Transactions on Audio, Speech, and Language Processing*, V14,N.4, 2006. **4.** \*Conversational Speech Synthesis and the need for some laughter, *IEEE Transactions on Audio, Speech, and Language Processing*, Vol 14, No. 4, July 2006. **5.** Developments in Corpus-Based Speech Synthesis; Approaching Natural Conversational Speech, *IEICE Transactions on Information & Systems*, pp.376-383, Vol E88D, No.3, March 2005. **6.** \*Getting to the heart of the matter; speech as the expression of affect; rather than just text or language, *Language Resources and Evaluation*, Vol.39, N.1, 109-118, 2005. **7.** \*Technology trends in corpus-based speech synthesis Developments in Corpus-based speech synthesis, invited article, pp 497-500, in *Journal of the Institute of Electronics, Information and Communication Engineers*, Vol.87, No 6, June 2004. **8.** Campbell, N., Erickson,D., What do people hear? a study of the perception of nonverbal affective information in conversational speech, *Journal of the Phonetic Society of Japan*, pp.928, V.8,N.1, 2004. **9.** Databases of Expressive Speech, *Journal of Chinese Language and Computing*, Vol 14, N.4, pp 295-304, 2004. **10.** (in Japanese) Corpus-based speech synthesis, *Journal of the IEICE*, V87N6,497-500, 2004. **11.** Douglas, C. E, Cowie R., Campbell N., Editorial: Speech & Emotion *Speech Communication* 40(2003) pp14, 2003. **12.** Douglas, C. E, Campbell N., Cowie R., Roach, P., Emotional speech: Towards a new generation of databases, *Speech Communication* 40(2003) pp.33-60 **13.** Iida, A. and Campbell, N., Speech database design for a concatenative text-to-speech synthesis system for non-speaking individuals, *International Journal of Speech Technology*, 6, 379-392, Oct 2003 **14.** Mokhtari P., Campbell N., Automatic Measurement of Pressed/Breathy Phonation at Acoustic Centres of Reliability in Continuous Speech *IEICE TRANS. INF.& SYST.*, Vol.E86D, No.3 pp574-582, March 2003 **15.** Cross-language Voice Conversion Using a Bilingual Database, *IPSJ Journal*, Vol.43, No.7, pp.2177-2185, July 2002. M. Mashimo, T. Toda, H. Kawanami, K. Shikano, N. Campbell, **16.** Speech database Design for a Concatenative Text-to-S-peech Synthesis System for Individuals with Communicative Disorders, *International Journal of Speech Technology*, 6, 379-392, 2003. **17.** A Corpus-based Speech Synthesis System with Emotion, *Speech Communication* Vol. 40/12 pp. 161-187. Iida, A., Higuchi, F., Campbell,N., Yasumura, M. 2001 **18.** Corpus-based Speech Synthesis for ALS patients to assist their communication, *Technical Report of the IEICE*, A. Iida, N. Campbell, M. Yasumura, 2000. **19.** (in Japanese)On the relation between intonation and syntax Japanese *Meiji Press* 1998/3/10 **20.** Description, Acquisition and Evaluation of Rules and Data for Speech Synthesis, *IEICE TRANS. INF.& SYST.*, Vol.J83DII, No.11 pp2068-2076, Sagisaka Y., Campbell N., Nov 2000. **21.** (in Japanese)A foreigners view of Japanese Research Management *Journal of the Information Processing Society*, V.82, N.1, 79-81, 1991-01. **22.** A call for generic-use large-scale single-speaker speech corpora and an example of their application in concatenative speech synthesis, *J.Acoust, Soc, Jpn.*, (E) 20,3 241-246, 1999 **23.** (in Japanese) A Study of Japanese Speech Timing from the Syllable

Perspective, Acoustical Society of Japan, *Speech Research* V.3, N.2 pp.29-39, 1999 **24.** (in Japanese) Talking to Machines; future speech synthesis technology, *Journal of the IEICE* 1999.5.24, 50 **25.** Talking Machines for Information Access *Technical Report of the IEICE*, TL9934, 1999-12. **26.** Detecting Prosodic Boundaries in Speech. *Speech Communication*, Vol 13, pp.343-354. 1993. **27.** Segment Durations in a Syllable Frame W. N. Campbell & S. D. Isard: *Journal of Phonetics*, Special Issue on Speech Synthesis, Vol.19 #1, pp.37-48, 1991.

**Invited talks/articles: (n=22):** **1.** *Speech Timing in Japanese & English* International Symposium on Japanese Prosody (pp 207-216) 1989 **2.** *From Read Speech to Real Speech* (invited paper) Symposium on the Phonetics and Phonology of Speaking Styles, Proc XIIIth ICPhS, Stockholm 1995. **3.** *Mapping across speaking styles from read to real* (Invited Paper ICPhS Symposium 1995) **4.** COCODA & Oriental COCODA: a Progress Report, Panel session ICSP99, p.7780, 1999.8.18 **5.** (in Japanese) *Talking with Machines - conversations between Robots*, SONY CSL, Tokyo, 1999/3/9 **6.** *Speech Database Processing Tools: the state of the art in automatic labelling of speech*, Panel Discussion (chair/organiser) LREC 2000 **7.** *Opinion Piece*, ATR Journal, Special Essay 2000, Current at ATR ATR UpToDate 2000 **8.** *The Sound of a Smiling Voice*, at Symposium on Face, Speech, and Acoustics, Venice 2002 **9.** *Do-it-Yourself Speech Synthesis* 10th Virtual Reality Symposium, Tokyo University, 2003. **10.** LREC 2004 Keynote: *Getting to the Heart of the Matter*, 2004 **11.** Humaine WP5 workshop *Data Collection in the JST CREST Project*, Belfast 2004. **12.** *Talking with Robots* ATR Expo, 2004. **13.** Human Language Technologies *Expressive Speech Synthesis: What is the Goal?*, Tallinn, 2005. **14.** The 36th Poznan Linguistics Meeting *The Second Channel; Nonverbal Information in Speech*, Poznan, Poland, 2005. **15.** LREC 2006 Panel Session: *Resources for Processing Affect in Speech*, Genoa, Italy. **16.** *Speech Signal Annotation, Processing and Synthesis* 2006, Keynote Speech, Poznan, Poland **17.** ISLTC 2006, *Keynote Speech*, Ljubljana, Slovenia **18.** *Guest Editor's Introduction* to the Special Issue of IEEE Transactions on Audio, Speech, and Language Processing on Expressive Speech Synthesis, Vol 14, No 4, July 2006. **19.** NATO-ASI Summer School: *The Fundamentals of Verbal and Nonverbal Communication and the Biometrical Issue*, Vietri, 2006. (invited lecturer) **20.** Panel on *Resources for the Processing of Affect in Interaction*, pp.1819, Report in The ELRA Newsletter, Apr-Sept 2006. **21.** *Hottest Issues in Speech Synthesis*, invited talk, LET M&I, Kansai U. Forum, Osaka, Japan, 2008 **22.** *Expressive Speech & Speech Synthesis* VISPP, Baltic Summer School, Estonia (3 lectures)

**Book chapters/articles: (n=14):** **1.** *Syllable-Based Segmental Duration*, in Talking Machines, eds. G. Bailly & C. Benoit, Elsevier Science Publishers, Amsterdam, 1991. **2.** *\*Prosody and the selection of units for speech synthesis*, Nick Campbell & Alan W. Black in Talking Machines (Springer) 1995. **3.** (in Japanese) *Basic Units of Intonation - towards a grammar of spoken language*, Syntax & Speech, Kuroshio Press, pp.73-91, 1999. **4.** *Spontaneous Speech* (Invited chapter) in Computing Prosody, Springer Verlag 1997 **5.** *Timing in Speech: a multilevel process* (Invited chapter) in Prosody; Theory and Experiment, Festschrift for Gosta Bruce Eds Horne et al, 1999 **6.** *Information Transfer in Example-Based Speech Translation* (Invited chapter) N.Campbell & H. Iida, in Automated Spoken Dialogue Systems, MIT Press 1999 **7.** (in Japanese) *Speech Synthesis*, Encyclopaedia of Artificial Intelligence, Kyoritu Syuppan, 2003. **8.** Webster's Encyclopaedia of Electronic/Electrical

Engineering (15000 wrd article on *Speech Synthesis*) **9.** (in Japanese) *Spoken Communication; a matter of shared experiences*, Speech & Syntax V, Kuroshio Press., pp.1929, 2006. **10.** Nick Campbell. *On the Use of Nonverbal Speech Sounds in Human Communication*, Verbal and Non-verbal Communication BehaviorsV, LNAI Vol. 4775, pp.117128, 06 Oct. 2007. **11.** *Robust real time face tracking for the analysis of human behavior*, Nick Campbell, Damien Douxchamps, in Machine Learning & Multimodal Interaction, Springer's LNCS series, 4892, pp.115, Dec. 2007. **12.** *How Speech Encodes Affect and Discourse Information; Conversational Gestures*, NATO Security through Science, Vol.18, IOS Press, pp.103114, May 1, 2007. **13.** *Expressive / Affective Speech Synthesis*, in Springer Handbook on Speech Processing and Speech Communication, Eds 2007 **14.** \**Expressive Speech Processing & Prosody Engineering in New Trends in Speech Based Interactive Systems*, Eds: Fang Chen & Kristiina Jokinen, Springer, 2007

**Conference papers (n>237):** **1.** with Akiko Nakagawa *Yes, yes, yes, a word with many meanings; the acoustics associated with intention variation*, Intl. Conf. on Speech Prosody, Campinas, Brazil, May 2008. **3.** *Active Listening Characteristics Confirm Spoken Dialogue to be a Very Two-way Interactive Process*, Proc. Acoustical Society of Japan, Spring Meeting, March 2008. **4.** *Automatic Processing of Multimodal Interactive Conversation Corpora*, in Proc Oriental-COCOSDA 2008, Kyoto, Japan **5.** *Multimodal Processing of Discourse Information; the Effect of Synchrony*, Proc 2nd Intl. Symposium on Universal Communication, 1SUC08, Osaka, Japan **6.** *Resources for multimodal discourse processing*, 2nd COST 2102 International Conference on Cross-Modal Analysis of Speech, Gestures, Gaze and Facial Expressions, Prague, Czech Republic **7.** *Approaches to conversational speech rhythm: speech activity in two-person telephone dialogues*, Special Session on Approaches to Speech Rhythm at XVIth ICPHS (invited). **8.** MLMI'07 Keynote *How to follow a conversation without listening to the words*, Proc Machine Learning & Multimodal Interaction, Brno, 2007. **9.** *Towards Conversational Speech Synthesis; Lessons Learned from the Expressive Speech Processing Project*, in Proc SSW6 ISCA Speech Synthesis Workshop, Bonn, 2007. **10.** with Scott Appling, D., *Mapping from Literal Transcriptions of Conversational Speech to a more Standard Form of Linguistic Representation*, pp.2825-2828, August, Interspeech 2007. **11.** *Who we laugh with affects how we laugh*, in Proc LAUGHTER w/s, ICPHS 2007 **12.** *On the Use of NonVerbal Speech Sounds in Human Communication*, Proc Paraling07, (Satellite w/s to ICPHS) Saarbrucken, Germany. **13.** with Damien Douxchamps, *Processing Image and Audio Information for Recognising Discourse Participation Status through Features of Face and Voice*, Interspeech 2007, Amsterdam. **14.** *Selecting Speech Fragments for Affect Display in Concatenative Expressive Speech Synthesis*, Proc ASJ Spring Meeting, Acousstical Society of Japan, Tokyo. **15.** with Makimoto, S., Kashioka, H., *Tagging Structure and Relationships in a Japanese Natural Dialogue Corpus*, Interspeech 2007, Amsterdam, Holland. **16.** with Douxchamps, D., *Processing Image and Audio Information for Recognising Discourse Participation Status through Features of Face and Voice*, Interspeech 2007. **17.** *Changes In Voice Quality with respect to Social Conditions*, Proc ICPHS 2007. **18.** with Nakagawa, A., *Speaking Style Variation and Speaker Personality*, Proc ICPHS 2007, International Congress of Phonetic Sciences, Germany, ....