Mr. John Kane B. Comm. M. Phil.

CONTACT INFORMATION	Post-doctoral Researcher Phonetics and Speech Laboratory Trinity College Dublin College Green Dublin 2, Ireland	*Office:* +353 (0)1 896 1348 *Mobile:* +353 (0)86 361 3506 *E-mail:* kanejo@tcd.ie *WWW:* Link to webpage

RESEARCH INTERESTS

My research interests in terms of my Ph.D thesis were on the modelling and characterisation of the role of the voice in speech. More specifically my Ph. D. research focused on modelling of the acoustic glottal source signal and on the development of acoustic features for detecting and discriminating various degrees of voice quality (e.g., breathy, tense, creaky voice). Besides further development, my subsequent research has focused on utilising and exploiting these tools and algorithms in various speech applications. These algorithms have to date benefitted areas including: emotion recognition, detection of psychological disorders, clustering of speaking styles in corpora of expressive speech and speech synthesis.

CURRENT COLLABORATIONS

- **Dr. Stefan Scherer - University of Sourthern California**
  Development of robust techniques for classifying and discriminating variation in speaking style and exploiting this information to make inferences over subject states. See publications: [3, 6, 11, 12, 21]

- **Dr. Thomas Drugman - University of Mons, Beligium**
  Creation of novel and robust speech processing algorithms to detect, characterise and model variation in phonation type and other non-verbal aspects of human speech. See publications: [2, 7-9, 17, 19, 20]

- **Dr. Matthew Aylett - CTO of CereProc Ltd. Edinburgh**
  Robust and automatic clustering of speaking styles in corpora of expressive speech for the purpose of expressive speech synthesis development. See publication: [6]

OTHER ACTIVITIES

- **Workshop:** I recently co-organised, along with Dr. João Cabral, an international workshop: Innovation and Applications in Speech Technology (IAST, Link). The workshop was attended by innovative young researchers as well as leaders in the field. Keynote talks were given by two high-profile cutting-edge researchers.

- **Reviewing:** I have acted as peer reviewer for the *Interspeech 2012 International speech* conference as well as for the *Cognitive Computation*, *Speech Communication* and *Computer Speech and Language* Journals.

ACADEMIC APPOINTMENTS

Post-doctoral Researcher Phonetics and Speech Laboratory Trinity College Dublin	October 2012 to Present
Ph.D. Researcher Phonetics and Speech Laboratory Trinity College Dublin	October 2008 to October 2012

EDUCATION	**Trinity College Dublin**, Ireland

Ph.D., Phonetics and Speech Laboratory, October 2008 to October 2012
- Thesis Topic: *Tools for analysing the voice: developments in glottal source and voice quality analysis.*
- Supervisor: Professor Christer Gobl
- Area of Study: Speech science and signal processing

M.Phil., School of Linguistic, Speech and Communication Sciences, September 2008
- Thesis Topic: *Frequency domain modelling of the voice source*
- Supervisor: Professor Christer Gobl
- Area of Study: Speech science and signal processing

University College Dublin, Ireland

B.Comm., Quinn School of Business, September 2001 to August 2004
- Graduated with Honours in Commerce

COMPUTER SKILLS

- **Signal processing:** Proficient in Matlab, Octave and C.

- **Text processing:** Strong skills in Python and Perl.

- **Web design:** Proficient in php/HTML, and strong skills in dreamweaver.

- **Statistics:** Proficient in R and strong skills in SPSS.

- **Word processing:** LaTeX, MS Word etc.

- **Operating systems:** Linux (preferred), also Mac OS X and Windows.

TEACHING EXPERIENCE

Lecturing/teaching assistance: Undergraduate and Masters students in *Speech Processing*, *Speech Science* and *Experimental Phonetics*, in Trinity College Dublin. Responsibilities included: lecturing, lab supervision, assignment/thesis setting and correcting.

JOURNAL PUBLICATIONS - PEER REVIEWED

[1] Kane, J., Gobl, C., (2013) Wavelet maxima dispersion for breathy to tense voice discrimination, *IEEE Transactions on Audio Speech and Language Processing*, 21(6), pp. 1170-1179. link.

[2] Kane, J., Drugman, T., Gobl, C., (2013) Improved automatic detection of creak, *Computer Speech and Language* 27(4), pp. 1028-1047. link.

[3] Scherer, S., Kane, J., Gobl, C., Schwenker, F., (2013) Investigating fuzzy-input, fuzzy-output support vector machines for robust voice quality classification. *Computer Speech and Language.* 27(1), pp. 263-287. link.

[4] Kane, J., Gobl, C., (2013) Evaluation of glottal closure instant detection in a range of voice qualities. *Speech Communication.* 55(2), pp. 295-314. link.

[5] Kane, J., Gobl, C., (2013) Automating manual user strategies for precise voice source analysis, *Speech Communication* 55(3), pp.397-414. link.

SELECTED
INTERNATIONAL
CONFERENCE
PUBLICATIONS -
PEER REVIEWED

[6] Kane, J., Scherer, S., Aylett, M., Morency, L-P., Gobl, C., (2013) Speaker and language independent voice quality classification applied to unlabelled corpora of expressive speech, ICASSP 2013, Vancouver, Canada. pdf.

[7] Drugman, T., Kane, J., Raitio, T., Gobl, C., (2013) Prediction of creaky voice from contextual factors, ICASSP 2013, Vancouver, Canada. pdf.

[8] Drugman, T., Kane, J., Gobl, C., (2012) Modeling the creaky excitation for parametric speech synthesis. *Proceedings of Interspeech, Oregon, USA.*

[9] Drugman, T., Kane, J., Gobl, C., (2012) Resonator-based creaky voice detection. *Proceedings of Interspeech, Oregon, USA.*

[10] Kane, J., Yanushevskaya, I., Ní Chasaide, A., Gobl, C., Exploiting time and frequency domain measures for precise voice source parameterisation. *Proceedings of Speech Prosody, Shanghai, China.* 2012. pdf.

[11] Scherer, S., Layher, G., Kane, J., Neumann, H. Campbell, N., An audiovisual political speech analysis incorporating eye-tracking and perception data. *Proceedings of LREC, Istanbul, Turkey.* 2012. pdf.

[12] Székely, É, Kane, J., Scherer, S., Gobl, C., Carson-Berndsen, J., Detecting a targetted voice style in an audiobook using voice quality features. *Proceedings of ICASSP, Kyoto, Japan.* 2012. pdf.

[13] Kane, J., Gobl, C., Identifying regions of non-modal phonation using features of the wavelet transform. *Proceedings of Interspeech, Florence, Italy.* 2011 pdf.

[14] Cabral, J., Kane, J., Gobl, C, Carson-Berndsen, J., Evaluation of glottal epoch detection algorithms on different voice types. *Proceedings of Interspeech, Florence, Italy.* 2011 pdf.

[15] Kane, J., Papay, K., Hunyadi, L., Gobl, C. On the use of creak in Hungarian spontaneous speech. *Proceedings of ICPhS, Hong Kong.* 2011 pdf.

[16] Yanushevskaya, I., Kane, J., Ní Chasaide, A., Gobl, C. An Exploration of Voice Source Correlates of Focus. *Proceedings of Interspeech, Makuhari, Japan.* 2010 pdf.

SUBMITTED
PAPERS

[17] Drugman, T., Kane, J., Gobl, C., Automatic analysis of the temporal excitation patterns of creaky voice, Submitted to *Computer Speech and Language.*

[18] Kane, J., Yanushevskaya, I., Dalton, J., Ní Chasaide, A., Gobl, C. Using phonetic feature extraction to determine optimal speech regions for maximising the effectiveness of glottal source analysis, Submitted to Interspeech 2013.

[19] Cullen, A., Kane, J., Drugman, T., Harte, N., Creaky voice and emotion classification, Submitted to Interspeech 2013.

[20] Raitio, T., Kane, J., Drugman, T., Gobl, C., HMM-based synthesis of creaky voice, Submitted to Interspeech 2013.

[21] Kane, J., Scherer, S., Morency, L-P., Gobl, C., A comparative study of glottal open quotient estimation techniques, Submitted to Interspeech 2013.

TOOLKIT

Voice Analysis Toolkit: A set of software for state-of-the-art glottal source and voice quality analysis now available on GitHub link

MORE
INFORMATION

More information and auxiliary documents can be found at
http://www.tcd.ie/slscs/postgraduate/phd-masters-research/student-pages/johnkane.php.