Résumé

Objective

Apply 12+ years of research and commercialisation experience to develop and improve state-of-the art machine-learning research algorithms and turn them into useful, reusable code that can make life easier for researchers, engineers, and the wider public.

Personal Particulars

Name	**Dr David Brendan DEAN**
Address	379 Milton Rd, Auchenflower, Queensland, Australia **(willing to relocate internationally or work remotely)**
Telephone	+61 407 151 912
Email	ddean@ieee.org
Profiles	linkedin.com/in/davidbdean ▪ github.com/dbdean ▪ stackoverflow.com/users/67829/david-dean

Technical Background

Wink Health — *September 2016 to present* — winkhealth.com

Employee #1, Data Scientist

Research, implementation, and integration of signal processing and machine learning algorithms into production systems for the detection of abnormal sleep patterns from smartphone applications.

- Developing an evaluation framework, and designing and deploying an associated distributed processing Docker-based AWS cluster to evaluate signal processing and machine-learning algorithms for abnormal sleep detection.
- Investigating novel techniques for sleep sound and abnormal event detection.
- Integration of signal processing and machine-learning techniques into production API for use in customer-facing applications.

Queensland University of Technology — *February 2004 to present*

Senior machine learning researcher at the Speech, Audio, Image and Video Technology (SAIVT) Laboratory
qut.edu.au/research/saivt

Visiting Senior Research Fellow
Senior Research Fellow (prior to July 2016)
Research Fellow (prior to 2014)

Supervision of PhD students and junior post-docs and conducting novel research over a wide range of ARC, CRC and industry supported research areas, including:

- Developing novel techniques for and commercial implementation of speaker diarisation across court recordings (government and industry funded)
- Improving the performance of speaker recognition approaches in short and mismatched enrolment and verification conditions (gov. and industry funded)
- Organising the collection of real-world databases for the evaluation and development of audio and/or visual speech processing algorithms (gov. funded)

Selected Industry and Academic Research Partners

AutoCRC ▪ Smart Services CRC ▪ ValidVoice ▪ NSSTC/DST
Auscript ▪ For The Record ▪ University of Avignon
Radboud University ▪ Universidad Autónoma de Madrid

Résumé

Teaching	Development, presentation and assessment of lecture, tutorial, assignment and examination material.
Clockwork Computing	*May 1999 to February 2004*
	Programming, management and design of resource scheduling software for use by a wide variety of customers.

Research Background

Queensland University of Technology	*April 2008 to present (visiting since July 2016)*
Australian Research Council Grants	LP130100110 – Next generation speaker recognition systems
	LP0991238 – Robust automatic speaker diarisation of audio documents by exploiting prior sources of information.
	DP0877835 – Robust speaker recognition with reduced utterance duration and inter-session variability
	LP0562101 – Audio visual speech recognition
PhD Supervision	Visual Recognition of Human Behaviour in Noisy Environments *Rajitha Navarathna (2009–2013)*
	Robust Automatic Speaker Linking and Attribution *Houman Ghaemmaghami (2010–2013)*
	Speaker Recognition Using I-Vector Features *Ahllan Kanagasundaram (2010–2014)*
	Improving Spoken Term Detection Using Complementary Information *Shahram Kalantari (2011–2015)*
	Domain Adaptation for Speaker Attribution *MD Hafizur Rahman (2014–2017)*
	Speaker Recognition in High Noise Environments Ahmed Kamil (2014–2017)
	Multimodal Emotional Recognition Using Deep Learning Dung Nyugen Tien (2015–2018)
Overview of Publications	528 citations across 70+ publications, with 18 publications having more than 10 citations, and a h-index of 13. Publication venues include:
	Speech Communication ▪ Computer Speech and Language IEEE Transactions on Audio, Speech and Language Processing ▪ International Conference on Acoustics Speech and Signal Processing (ICASSP) ▪ Interspeech Auditory-Visual Speech Processing (AVSP)
Recent Selected Publications *(please see bit.ly/ddscholar for full list)*	H. Ghaemmaghami, **D. Dean**, S. Sridharan, D. van Leeuwen, “A study of speaker clustering for speaker attribution in large telephone conversation datasets,” *Computer Speech and Language*, vol 40, pp. 23-45, November 2016.
	H. Ghaemmaghami, M. Rahman, I. Himawan, **D. Dean**, A. Kanagasundaram, S. Sridharan, C. Fookes, “Speakers In The Wild (SITW): The QUT Speaker Recognition System,” *Interspeech 2016*, San Francisco, USA. September 2016.
	S. Kalantari, **D. Dean**, H. Ghaemmaghami, S. Sridharan, C. Fookes “Cross database training of audio-visual hidden Markov models for phone recognition.” *Interspeech 2015*, Dresden, Germany, pp. 553-557. 2015.
	D. Dean, A. Kanagasundaram, H. Ghaemmaghami, M. Rahman, S. Sridharan, “The QUT-NOISE-SRE protocol for the evaluation of noisy speaker recognition,” *Interspeech 2015*,

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	Dresden, Germany, pp. 3456-3460. 2015
	H. Ghaemmaghami, **D. Dean**, S. Kalantari, S. Sridharan, C. Fookes, “Complete-linkage clustering for voice activity detection in audio and visual speech,” *Interspeech 2015*, Dresden, Germany.
	*R. Navarathna, **D. Dean**, S. Sridharan, P. Lucey, “Multiple cameras for audio-visual speech recognition in an automotive environment,” Computer Speech and Language*, vol. 27, no. 4, pp. 911-927, 2013
	D. Dean, S. Sridharan, “Dynamic visual features for audio-visual speaker verification,” *Computer Speech and Language,* vol. 24, no. 2, pp. 136-149, 2010.
Doctor of Philosophy	*February 2004 to March 2008*
	Synchronous HMMs for Audio-Visual Speech Processing
	Investigating novel approaches to the training and testing of synchronous HMMs for modelling audio-visual speech and speaker recognition.
Bachelor of Information Technology (with Distinction)	*February 1999 to November 2003*
Bachelor of Engineering – Electronics (First Class Honours)	GPA of 6.425 (on a 1 to 7 scale, 7 being highest) High Distinction or Distinction on 85% of subjects

Professional

Memberships	IEEE ▪ ISCA ▪ ASSTA ▪ OSMF
Technical Review Committees	Interspeech ▪ ICASSP ▪ SST ▪ Speaker Odyssey ▪ IEEE Transactions on Multimedia ▪ IEEE Transactions on Audio, Speech and Language Processing ▪ Computer Speech and Language ▪ Speech Communication
Invited Speaker	SLAM 2015 (keynote) ▪ Biometrics Institute ▪ Auto CRC ▪ Smart Services CRC

Technical Experience

Machine Learning/Research	• Audio and visual speech processing • Speaker recognition, verification and diarisation • Image processing • Developing reproducible research code • Development and distribution of research databases • PhD Supervision • Publication, grant and proposal writing
Software Engineering	• Commercialisation of research algorithms • Project management • Programming using C/C++ (GCC, Intel, and MS), Java, Python, Bash (awk/sed/etc.), MATLAB/Octave • Machine learning toolkits (HTK, Kaldi, LIA_RAL, Bob, ...) • Revision control using Git, and/or Subversion • Web Development using Django, PHP, Javascript • Database development using PostgreSQL, MySQL
Computer and Network Management	• Operation of Linux and Unix environments, including HPC, Grid Computing and Amazon Web Services • Expert computer and networking hardware skills

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