

Curriculum Vitae

Summary:

Mike Brookes is a Reader in the Communications and Signal Processing Research Group of the Department of Electrical and Electronic Engineering at Imperial College London. He obtained a BA in Mathematics from Cambridge University in 1972 and then spent four years at the Massachusetts Institute of Technology (1973-1977) before returning to the UK and joining Imperial College. His research focuses on speech processing, computer vision and the real-time implementation of speech processing algorithms. Within the area of speech processing, he has concentrated on the modelling and analysis of speech signals, the extraction of features for speech and speaker recognition and on enhancement using microphone arrays. He is the director of the Centre for Law Enforcement Audio Research (CLEAR) funded by the UK Home Office. He led a successful MoD-funded project on radar target recognition in partnership with General Dynamics and Qinetiq and is currently working on a number of computer vision projects concerned with multiperspective cameras.

Personal Details:

Name: Mr David Michael Brookes
Date of Birth: 22 January 1951
Nationality: British

Contact Details:

Address: EEE Dept, Imperial College, Exhibition Rd, London SW7 2BT
Phone: 020 7594 6165
Email: mike.brookes@imperial.ac.uk
WWW: <http://www.ee.ic.ac.uk/hp/staff/dmb/dmb.html>

Education:

1964-69	Winchester College	A-level Passes in Maths (A2), Further Maths (A), Physics (A1) and Economics (B)
1969-72	Cambridge University	BA (Mathematics), 2 nd class Honours degree
1972-73	Cambridge University	Postgraduate Certificate in Education

Memberships:

Member of IEEE, IET, BMVA, AES

Professional Experience:

1973-77	Engineer, Remote Sensing Laboratory, MIT, Cambridge, Mass, USA. My work involved the design of astronomical instrumentation and telescope control systems.
1977-79	Research Assistant, Imperial College. I was involved with the analysis of signals derived from biological systems.
1979-	Lecturer, then Senior Lecturer (1991) then Reader (2004) in EEE Dept, Imperial College, London.
1999-2008	Deputy Head of Department
2004-2005	Head of Communications & Signal Processing Group
2007-	Deputy Head of Communications & Signal Processing Group
2010	Engineering Faculty award for excellence in teaching

Current Research Areas

- Enhancement of very poor quality speech
- Acoustic Arrays
- Computer vision using multiple views

Grants

1. Naylor, P. A. N. & Brookes, D. M., "Dereverberation of Audio Music and Speech (DREAMS)" *EU FP7 Marie Curie ITN*, 01/2013-12/2016 (P40926)

2. Brookes, D. M., Dragotti, P.-L. “Image Change Detection”, *EPSRC + L3-TRL Case award*, £92k, 2011-2014 (G01941)
3. Brookes, D. M., Naylor, P. A. N. “Aircrew Noise Reduction”, *QinetiQ*, £75k+£10k extension, 07/2011-03/2012, (P35565)
4. Brookes, D. M., Naylor, P. A. N. & Huckvale, M. “Speech Cleaning for Law Enforcement”, *Home Office*, £1,113k, 2007-2012 (P13566)
5. Dragotti, P.L. & Brookes, D.M., “Sensor Arrays for Scene Interpretation and Target Classification”, *SEAS DTC, Selex UK*, £79k, 2008-2009 (P19596; extension to P03852)
6. Brookes, D. M. & Dragotti, P.L., “Unsupervised 3-D multiview scene learning and updating ”, *General Dynamics UK, DIF DTC* , £156k, 2007-2009 (P11195)
7. Brookes, D. M. “Sensor Information Processing and Management (SIPAM)”, *QinetiQ UK*, £50k, 2007-2008 (P06378)
8. Dragotti, P. L. & Brookes, D. M., “Integrated Sensor Arrays for Scene Interpretation and Target Classification”, *SEAS DTC, Selex UK*, £229k, 2005-2008 (P03532)
9. Brookes, D. M., “Multi-modal System for Perimeter Security”, in collaboration with Thales Research & Technology (UK) Ltd and Thales Land & Joint Systems, *DTI*. £120k, 2005-2007. (P03852)
10. Brookes, D. M., “Adaptive Markov Models for Signature Extraction” , *General Dynamics DIF DTC*, 2003-2006 (PN1861)
11. Brookes, D. M., Naylor, P. A. N., Cheung,P.Y.K., Burdett,A.J. & Constantinides,A.G., “Zero IF Architectures for DAB Receivers”, *Panasonic System LSI Design Europe*, £240k, 2001-2004 (PN1389)
12. Naylor, P. A. & Brookes, D. M., “Novel Features for Speaker Verification”, *EPSRC GR/N01569*, £144k, 2000-2003 (PR0813)
13. Cheung, P. Y. K., Brookes, D. M. & Clarke, T. J. W., “Architectures and Designs for Video Compression”, *LSI Logic*, £482k, 1999-2002 (PN0752)
14. Cheung, P. Y. K., Luk, W. & Brookes, D. M., “Real-time FPGA Architectures”, *Teaching Company Directorate/Motorola*. £353k, 1997-2002 (5752/3901)
15. Brookes, D. M. & Naylor, P. A., “Acoustic Echo Control”, *LG Semicon*, £80k, 1997-1998
16. Brookes, D. M., “Feature Space Transformations for Speaker-Adaptive Speech Recognition”, *SERC GR/J51757*, £124k, 1994-1997
17. Brookes, D. M., “Speech Enhancement”, *Pacific Comm Sciences*, £9k, 1993-1996.
18. Brookes, D. M., “Digital Halftoning”, *Crossfield Electronics*, 1990-1993.
19. Brookes, D. M., “Inverse Filtering for Speaker Quantification”, *SERC GR/E90922*, £70k, 1989-1992.
20. Constantinides, A. G. & Brookes, D. M., “Speech Interfacing & Phonetic Algorithms” *Alvey/SERC GR/D15904 & GR/E64695*, £275k, 1985-1988.

Book Chapters:

1. C. Gilliam, M. Brookes, and P. L. Dragotti. “Image based rendering and the sampling of the plenoptic function”. In F. Dufaux, B. Pesquet-Popescu, and M. Cagnazzo, editors, *Emerging Technologies for 3D Video: Creation, Coding, Transmission and Rendering*, chapter 12, pages 231–248. Wiley, 2013.

Journal Publications:

1. N. D. Gaubitch, M. Brookes, and P. A. Naylor. Blind channel magnitude response estimation in speech using spectrum classification. *IEEE Trans. Audio, Speech, Language Processing*, 21(10):2162–2171, October 2013. doi: 10.1109/TASL.2013.2270406
2. J. Pearson, M. Brookes, and P. L. Dragotti. Plenoptic layer-based modelling for image based rendering. *IEEE Trans. Image Proc.*, 22(9):3405–3419, September 2013. doi: 10.1109/TIP.2013.2268939
3. G. Hilkhuisen, N. Gaubitch, M. Brookes, and M. Huckvale. Effects of noise suppression on intelligibility: dependency on signal-to-noise ratios. *J. Acoust. Soc. Amer.*, 131(1): 531-539, Jan 2012. doi: 10.1121/1.3665996
4. A. Chorti and M. Brookes. On the effect of Voigt profile oscillators on OFDM systems. *IEEE Trans. Circuits Syst. II*, 58: 768 – 772, Nov. 2011. doi: 10.1109/TCSII.2011.2168011.

5. A. Chorti and M. Brookes. Performance analysis of COFDM and DAB receivers in narrow-band and tonal interference. *Telecommunication Systems Journal*, 46 (2), Feb. 2011. doi: 10.1007/s11235-010-9282-6
6. J. Gudnason, J. Cui, and M. Brookes. SAR automatic target recognition from super-resolution scattering center features. *IEEE Trans Aerosp Electron Syst*, 45 (4): 1512–1524, Oct. 2009. doi: 10.1109/TAES.2009.5310314.
7. Bouganis, C.-S. and Brookes, M. “Statistical Multiple Light Source Detection”. *IET Computer Vision*, 1(2):79–91, June 2007. doi: 10.1049/iet-cvi:20065001.
8. Naylor, P.A., Kounoudes, A., Gudnason, J. and Brookes, M., “Estimation of Glottal Closure Instants in Voiced Speech using the DYPASA Algorithm” *IEEE Transactions on Speech and Audio Processing*, 15(1):34-43, 2007. doi: 10.1109/TASL.2006.876878
9. Naylor, P.A., Cui, J. and Brookes, M., “Adaptive Algorithms for Sparse Echo Cancellation”, *Signal Processing*, 86(6):1182-1192, 2006. doi: 10.1016/j.sigpro.2005.09.015
10. Brookes, M., Naylor, P.A. and Gudnason, J. “A Quantitative Assessment of Group Delay Methods for Identifying Glottal Closures in Voiced Speech” *IEEE Transactions on Speech and Audio Processing*, 14(2):456-466, 2006. doi: 10.1109/TSA.2005.857810
11. Chorti, A. & Brookes, M. A Spectral Model for RF Oscillators with Power-Law Phase Noise *IEEE Trans on Circuits and Systems I*, 53(9):1989-1999, 2006. doi: 10.1109/TCSI.2006.881182
12. Chorti, A. & Brookes, M. On the Effects of Memoryless Nonlinearities on M-QAM and DQPSK OFDM Signals *IEEE Trans in Microwave Theory and Techniques*, 54(8):3301-3315, 2006. doi: 10.1109/TMTT.2006.879129
13. Androutsopoulos, V, Brookes and M. Clarke T.J.W., “Protocol Converter Synthesis” *IEE Proc Computers and Digital Techniques*, 151(6):391-401, Nov 2004. doi: 10.1049/ip-cdt:20041100
14. Bouganis, C.-S. & Brookes, M. “Multiple Light Source Detection” *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 26(4):509-514, April 2004. doi: 10.1109/TPAMI.2004.1265865
15. Brookes, D.M., “Coloured Noise generation without Filter Startup Transient”, *Electronics Letters*, 37(4):255-256, Feb 2001. doi: 10.1049/el:20010144
16. Brookes, D.M. “Algorithms for Max and Min Filters with Improved Worst-Cases Performance”, *IEEE Trans on Circuits & Systems -II*, 47(9):930-935, Sept 2000. doi: 10.1109/82.868461
17. Brookes, D. M. and Loke, H.P. “Energy Flow in Lossless Tube Model of Vocal Tract with Applications to Glottal Closure and Opening Detection”, *Electronics Letters*, 34(23):2202-2204, Nov 1998.
18. Brookes, D.M. and Leung, M.H., “Stereophonic Speech Recognition in Noise using compensated Hidden Markov models”, *Electronics Letters*, 34(19):1827-1829, Sept 1998.
19. Bound, J. P., P. W. Harvey, and D. M. Brookes, "The Incidence of Anencephalus in the Fylde Peninsula 1956-76 and Changes in Water Hardness," *J. Epidem and Comm Health*, 35(2):102-105, June 1981.
20. Brookes, M., "Digital Solid-state Scan-Converter with Unusual Display Capabilities," *Applied Optics*, 14(8):1835-1838, Aug 1975.
21. Brookes, M., "An Inexpensive Automatic Telescope Dome Controller," *Rev Sci Instrum*, 45(11):1372-1374, Nov 1974.

Conference Publications:

1. A. H. Moore, M. Brookes, and P. A. Naylor. Roomprints for forensic audio applications. In *IEEE Wkshp Applications of Signal Processing to Audio and Acoustics*, New Paltz, October 2013.
2. J. Eaton, M. Brookes, and P. A. Naylor. A comparison of non-intrusive SNR estimation algorithms and the use of mapping functions. In *Proc. European Signal Processing Conf.*, Marrakesh, September 2013.
3. A. Moore, M. Brookes, and P. A. Naylor. Room geometry estimation from a single channel acoustic impulse response. In *Proc. European Signal Processing Conf.*, Marrakesh, September 2013.
4. D. Sharma, P. A. Naylor, and M. Brookes. Non-intrusive speech intelligibility assessment. In *Proc. European Signal Processing Conf.*, Marrakesh, September 2013.

5. Y. Wang and M. Brookes. A subspace method for speech enhancement in the modulation domain. In *Proc. European Signal Processing Conf.*, Marrakesh, September 2013.
6. S. Gonzalez and M. Brookes. Speech active level estimation in noisy conditions. In *Proc. IEEE Intl Conf. Acoustics, Speech and Signal Processing*, Vancouver, May 2013.
7. Y. Wang and M. Brookes. Speech enhancement using a robust Kalman filter post-processor in the modulation domain. In *Proc. IEEE Intl Conf. Acoustics, Speech and Signal Processing*, Vancouver, May 2013.
8. M. Brookes. Enhancement of very noisy speech. In *Proc. Wkshp on Enhancement of Degraded Speech: Processing Modelling, Evaluation*, London, Oct. 2012.
9. J. Eaton, M. Brookes, and P. A. Naylor. An evaluation of single-ended snr estimation techniques. In *Proc. Wkshp on Enhancement of Degraded Speech: Processing Modelling, Evaluation*, London, Oct. 2012.
10. N. Gaubitch, M. Brookes, P. A. Naylor, and D. Sharma. Single-microphone blind channel identification in speech using spectrum classification. In *Proc. Wkshp on Enhancement of Degraded Speech: Processing Modelling, Evaluation*, London, Oct. 2012.
11. N. D. Gaubitch, H. W. Löllmann, M. Jeub, T. H. Falk, P. A. Naylor, P. Vary, and M. Brookes. Performance comparison of algorithms for blind reverberation time estimation from speech. In *Proc. Wkshp on Enhancement of Degraded Speech: Processing Modelling, Evaluation*, London, Oct. 2012.
12. S. Gonzalez and M. Brookes. Sibilant speech detection in noise. In *Proc. Wkshp on Enhancement of Degraded Speech: Processing Modelling, Evaluation*, London, Oct. 2012.
13. D. Sharma, G. Hilkuysen, P. A. Naylor, N. D. Gaubitch, M. Huckvale, and M. Brookes. Descriptive vocabulary development for degraded speech. In *Proc. Wkshp on Enhancement of Degraded Speech: Processing Modelling, Evaluation*, London, Oct. 2012.
14. S. Gonzalez and M. Brookes. Sibilant speech detection in noise. In *Proc. Interspeech Conf., Portland*, Sept. 2012.
15. D. Sharma, G. Hilkuysen, P. A. Naylor, N. D. Gaubitch, M. Huckvale, and M. Brookes. Descriptive vocabulary development for degraded speech. In *Proc. Interspeech Conf.*, Portland, Sept. 2012.
16. N. D. Gaubitch, H. W. Löllmann, M. Jeub, T. H. Falk, P. A. Naylor, P. Vary, and M. Brookes. Performance comparison of algorithms for blind reverberation time estimation from speech. In *Proc. Intl Wkshp Acoustic Signal Enhancement*, Aachen, Sept. 2012.
17. D. Sharma, P. A. Naylor, N. D. Gaubitch, and M. Brookes. Non intrusive CODEC detection algorithm. In *Proc. IEEE Intl Conf. Acoustics, Speech and Signal Processing*, pages 4477–4480, Kyoto, Mar. 2012.
18. C. Gilliam, J. Pearson, M. Brookes, and P. L. Dragotti. Image based rendering with depth cameras: How many are needed? In *Proc. IEEE Intl Conf. Acoustics, Speech and Signal Processing*, Kyoto, Mar. 2012.
19. M. Jahangir and M. Brookes. Practical challenges of tactical change detection. In *Proc Sensor Signal Processing for Defence*, London, Sept. 2011
20. C. Gilliam, P. L. Dragotti, and M. Brookes. Adaptive plenoptic sampling. In *Proc Intl Conf Image Processing*, Brussels, Sept. 2011.
21. J. Bai and M. Brookes. Adaptive hidden Markov models for noise modelling. In *Proc European Signal Processing Conf*, Barcelona, Aug. 2011.
22. N. Gaubitch, M. Brookes, P. A. Naylor, and D. Sharma. Single-microphone blind channel identification in speech using spectrum classification. In *Proc European Signal Processing Conf*, Barcelona, Aug. 2011.
23. S. Gonzalez and M. Brookes. A pitch estimation filter robust to high levels of noise (PEFAC). In *Proc European Signal Processing Conf*, Barcelona, Aug. 2011.
24. D. Sharma, P. A. Naylor, N. Gaubitch, and M. Brookes. Short-time objective assessment of speech quality. In *Proc European Signal Processing Conf*, Barcelona, Aug. 2011.
25. J. Pearson, P.-L. Dragotti, and M. Brookes. Accurate non-iterative depth layer extraction algorithm for image based rendering. In *Proc IEEE Intl Conf Acoustics, Speech and Signal Processing*, pages 901–904, Prague, May 2011.
26. M. Brookes, N. Gaubitch, and D. Sharma. Speech cleaning technology and research. In *Proc Intl Communications Data & Digital Forensics Seminar*, London, Mar. 2011.

27. M. Brookes and M. Huckvale. Can binary masks improve intelligibility? In Proc Wkshp on Speech in Noise: Intelligibility and Quality, Lyon, Jan. 2011. URL http://www.phon.ucl.ac.uk/events/quality2011/ID2007_Mark_Huckvale.pdf.
28. O. Aribisala, M. Otter, M. Outhouse, A. Beach, A. Parslow, S. Maskell, T. Cooper, M. Cleland, M. Brookes, P. L. Dragotti, G. Tzimiropoulos, T. Stathaki, J. G. Liu, H. Yan, D. Myatt, and M. Smith. TIGER: Tactical information generation exchange and representation. In Proc SEAS DTC Conf, Edinburgh, July 2010.
29. C. Gilliam, P. L. Dragotti, and M. Brookes. A closed-form expression for the bandwidth of the plenoptic function under finite field of view constraints. *Proc Intl Conf Image Processing*, Sept 2010.
30. P. A. Naylor, N. D. Gaubitch, D. Sharma, G. Hilkhuisen, M. Huckvale, and M. Brookes. Intelligibility estimation in law enforcement speech processing. In *Proc ITG Conf on Speech Communication*, Bochum, Germany, Oct. 2010.
31. D. Sharma, G. Hilkhuisen, N. D. Gaubitch, P. A. Naylor, M. Brookes, and M. Huckvale. Data driven method for non-intrusive speech intelligibility estimation. *Proc European Signal Processing Conf, Denmark*, Aug. 2010.
32. P. L. Dragotti and M. Brookes. Adaptive sampling of the plenoptic function. In *Proc SEAS DTC Conf*, Edinburgh, July 2010.
33. N. D. Gaubitch, M. Brookes, P. A. Naylor, and D. Sharma. Bayesian adaptive method for estimating speech intelligibility in noise. *Proc AES Conf on Audio Forensics, Hillerød*, June 2010.
34. J. Berent, P. L. Dragotti, and M. Brookes. Adaptive layer extraction for image based rendering. *Proc IEEE Wkshp on Multimedia Sigal processing*, Rio de Janeiro, Oct. 2009.
35. N. D. Gaubitch, M. Brookes, and P. A. Naylor. Blind channel identification in speech using the long-term average speech spectrum. *Proc European Signal Processing Conf*, Glasgow, Aug. 2009.
36. M. Brookes, P. L. Dragotti, A. Yu, and Y. Wang. Unsupervised 3D multiview scene learning and updating. In *Proc DIF DTC Final Conference*, 2009.
37. P. L. Dragotti and M. Brookes. A review of image-based modelling techniques. *Proc SEAS DTC Conference*, July 2009.
38. Wang, Y., Brookes, M. and Dragotti, P. L. "Object Recognition using Multi-view Imaging". *Proc Intl Conf on Signal Processing*, Beijing, October 2008.
39. Emaminejad, A. and Brookes, M. "FEUDOR: Feature Extraction Using Distinctive Octagonal Regions". In *Proc BMVC*, 2008.
40. Dragotti, P. L., Brookes, M. and Wang, Y. "Unsupervised Representation and Understanding of Multi-View Images". In *Proc SEAS DTC Conf*, Edinburgh, June 2008.
41. Cui, J., Gudnason, J. and Brookes, M. "Hidden Markov Model for Multi-Perspective Radar Target Recognition". In *Proc IEEE Radar Conf*, Rome, May 2008.
42. Gudnason, J. and Brookes, M. "Voice source cepstrum coefficients for speaker identification". In *Proc IEEE Intl Conf Acoustics, Speech and Signal Processing*, pages 4821–4824, March 2008. doi: 10.1109/ICASSP.2008.4518736.
43. Khong, A. W. H., Gan, W.-S., Naylor, P. A. and Brookes, M.. "A low complexity fast converging partial update adaptive algorithm employing variable step-size for acoustic echo cancellation". In *Proc IEEE Intl Conf Acoustics, Speech and Signal Processing*, pages 237–240, 2008. doi: 10.1109/ICASSP.2008.4517590.
44. Dragotti, P. L., and Brookes, M. "Efficient Segmentation and Representation of Multi-View Images". In *Proc SEAS DTC Conf*, pages SEN3:1–7, Edinburgh, 2007.
45. Bhunjun, V. & Brookes, M. "Perceptual Gain Function For Eigenspectral Domain Speech Enhancement" *Proc ICASSP*, 2007
46. Chorti, A. & Brookes, D.M. "Resolving Near-Carrier Spectral Infinities Due To 1/F Phase Noise In Oscillators" *Proc ICASSP*, 2007
47. Khong, A. & Brookes, M. "The Effect Of Calibration Errors On Source Localization With Microphone Arrays" *Proc ICASSP*, 2007
48. Naylor, P.; Khong, A. & Brookes, M. "Misalignment Performance Of Selective Tap Adaptive Algorithms For System Identification Of Time-Varying Unknown Systems" *Proc ICASSP*, 2007
49. Bhunjun, V.; Brookes, M. & Naylor, P.A. "Model-based eigenspectrum estimation for speech enhancement", *Proc Asilomar Conf on Signals Systems and Computers*, 2006, TP1.8:1-4

50. Bhunjun, V.; Brookes, M. & Wen, Y.J. "Eigendomain-Based Noise Estimation With The Minimum Statistics Approach", *Proc Intl Wkshp on Acoustic Echo and Noise Control*, 2006
51. Cui, J., Gudnason J. and Brookes, M., "Maximum A-Posteriori Adaptive Masking for Clutter Suppression in Automatic Radar Target Recognition", *Proc IEEE Radar Conf*, pp718-724, 2006
52. Cui, J., Gudnason, J. and Brookes, M., "Radar shadow and Super-resolution features for Automatic Recognition of MSTAR Targets", *IEEE Intl radar conf*, pp534-539, May 2005
53. Cui, J., Gudnason, J. and Brookes, M., "Automatic Recognition of MSTAR Targets using radar shadow and superresolution features", *IEEE ICASSP*, pp 689-592, March 2005
54. Hewavithana, T and Brookes, M., "Blind Adaptive Channel Equalization for OFDM Using the Cyclic Prefix Data", *IEEE Globecom* , Nov 2004
55. Bhunjun, V. and Brookes, M., "Narrowband Noise Estimation in the Subspace Domain", *International Symposium on Intelligent Multimedia, Video & Speech Processing*, Oct 2004
56. T. C. Hewavithana and D. M. Brookes. A Blind Adaptive Channel Equalization Algorithm for OFDM systems. In *Proc Intl Wkshp on Signal Processing for Wireless Communications (SPWC)*, pages 140–144, London, June 2004.
57. Dante, A. & Brookes. M. "Precise real-time outlier removal from motion vector fields for 3D reconstruction", *IEEE Intl Conf on Image Processing*, Sept 2003
58. Bouganis, C.-S. & Brookes,M., "Class-based Multiple Light Detection: An Application to Faces", *Proc British Machine Vision Conference*, Sept 2003
59. Dante, A. and Brookes, M., "Robust multi-body segmentation", *Proc British Machine Vision Conference*,Sept 2003
60. Hewavithana,T.C. & Brookes,M., "Soft Decisions for DQPSK Demodulation for the Viterbi Decoding of Convolutional Codes" - *IEEE ICASSP*, 2003
61. Androutsopoulos,V., Clarke,T.J.W. & Brookes, D. M., "Synthesis and Optimization of Interfaces between Hardware Modules with Incompatible Protocols" *IEEE ISCAS 2003*, May 2003
62. Kounoudes.A., Naylor,P.A. & Brookes,M. "Automatic Epoch Extraction for Closed-Phase Analysis of Speech", *DSP2002 Conference*, Santorini, July 2002
63. Gudnason,J. & Brookes,M., "Distribution Based Classification using Gaussian Mixture Models", *Proc ICASSP*, May 2002.
64. Kounoudes, A., Naylor, P.A. & Brookes, M. "The DYPSA Algorithm for estimation of Glottal closure instants in voiced speech", *Proc ICASSP*, May 2002.
65. Brookes, D.M. and Loke, H.P., "Modelling Energy Flow in the Vocal Tract with Applications to Glottal Closure and Opening Detection", *Proc IEEE ICASSP*, Vol.1, pp.213-216, March 1999.
66. Wiewiorka, A. and D. M. Brookes, "Exponential Interpolation of States in a Hidden Markov Model," *Proc Inst of Acoustics*, vol. 18 Part 9, pp. 201-208, Nov 1996.
67. Shields, D. C. and D. M. Brookes, "Speech Enhancement using a Minimum Mean Square Error Bayesian Estimator," *Proc Inst of Acoustics*, vol. 18 Part 9, pp. 147-154, Nov 1996.
68. Flesch, S. and D. M. Brookes, "Speech recognition using Speaker Dependent Frequency Warping," *Proc Inst of Acoustics*, vol. 18 Part 9, pp. 259-266, Nov 1996.
69. Sanches, I. and D. M. Brookes, "Compensando-se Modelos de Hidden Markov Para O Reconhecimento Automatico de Fala Em Ruído," 13o. *Simposio Brasileiro de Telecomunicacoes*, 6 pp, Aguas de Lindoia, Brasil, Sept 1995.
70. Sanches, I. and D. M. Brookes, "Improved Speech Recognition through the use of Noise-Compensated Hidden Markov Models, " *Intl Conf on Signal Processing Applications & Technology*, 5 pp. Boston, Oct 1995.
71. Brookes, D. M. and D. S. F. Chan, "Speaker Characteristics from a Glottal Airflow Model using Robust Inverse Filtering," *Proc Inst of Acoustics*, vol. 16 Part 5, pp. 501-508, November 1994.
72. Ayer, C. M., M. J. Hunt, and D. M. Brookes, "A Discriminatively Derived Linear Transform for Improved Speech Recognition," *Eurospeech*, vol. 1, pp. 583-586, Berlin, Sept 1993.
73. Brookes, D. M., R. I. Harris, and R. J. Wilson, "Archimedes project of the Eureka scheme: the application of digital signal processing to large scale simulation of room acoustics, Part III," *AES Convention*, Paris, 1991.
74. Chan, D. S. F. and D. M. Brookes, "Variability of Excitation Parameters from Robust Closed Phase Glottal Inverse Filtering," *European Conf on Speech Communication & Technology*, pp. 33.1.1 - 33.1.4, Paris, Sept 1989.

75. Howard, D. M., D. M. Brookes, and D. S. F. Chan, "Dynamic Excitation Control in Parallel Formant Speech Synthesis," *FASE88*, vol. 3, pp. 1123-1130, 1988.
76. Brookes, D. M. and P. A. Naylor, "Speech Production Modelling with Variable Glottal Reflection Coefficient," *ICASSP*, vol. 5, pp. 671-674, IEEE, New York, 1988.
77. Huckvale, M. A., D. M. Brookes, L. T. Dworkin, M. E. Johnson, D.J. Pearce, and L. Whitaker, "The SPAR Speech Filing System," *European Conf on Speech Technology*, vol. 1, pp. 305-308, Edinburgh, Sept 1987.
78. M. Brookes and E. F. Lyon. A plan to implement computer-assisted astronomical observing. In *Proc Intl Conf on Telescope Automation*, pages 42–51, Cambridge, Mass, May 1975.

PhD/MPhil Theses Supervised:

1. J. Bai, "Adaptive Hidden Markov Noise Modelling for Speech Enhancement", PhD thesis, Imperial College London, 2013.
2. C. Gilliam, "Adaptive Plenoptic Sampling: Theory and Applications", PhD thesis, Imperial College London, 2012.
3. A. Emaminejad, "Features for matching people in different views", PhD thesis, Imperial College London, 2010.
4. Y. Wang. "Object Recognition using Multi-View Imaging", PhD thesis, Imperial College London, 2009.
5. Bhunjun, V, "Subspace-based Enhancement using Eigen-temporal and Eigen-spectral Models", PhD Thesis, University of London, 2007.
6. Gudnason, J, "Voice Source Cepstrum Processing for Speaker Identification", PhD Thesis, university of London, 2007.
7. Cui, J, "Recognition of Stationary and Moving Targets from High Range Resolution Radar Profiles", PhD Thesis, University of London, 2007.
8. Chorti, A., "The Impact of Circuit Nonlinearities and noise in OFDM Receivers", PhD Thesis, University of London, 2005
9. Hewavithana, T. C., "Algorithms for Long Delay Equalization and Soft Decision Decoding in Digital Audio Broadcasting Receivers", PhD Thesis, University of London, 2004
10. Bouganis, C.-S., "Multiple Light Source Detection with Application to Face Recognition", PhD Thesis, University of London, 2004
11. Dante, A, "Real-Time Distance Estimation and 3D Scene Reconstruction From Image Sequences", PhD Thesis, University of London, 2004
12. Barnes, H., "Speech Enhancement using Microphone Arrays", PhD Thesis, University of London, 2004
13. Shields, D.C., "Speech Enhancement using Bayesian Estimation with Signal Dependent Prior Distributions", MPhil Thesis, University of London, 2001
14. Alexopoulos, K., "Phase Spectral Representation for Low Bit-Rate Speech Coding", PhD Thesis, University of London, 2001
15. Wiewiorka, A., "Speech Recognition using Hidden Markov Models with Exponential Interpolation of State Parameters", 1997
16. Wilson, R. J., "Noise Source Cancellation in Audio Recordings", PhD Thesis, University of London, 1997.
17. Chan, D. S. F., "Speech Production Modelling based on Glottal Inverse Filtering," PhD Thesis, University of London, 1994.
18. Sanches, I., "Improved Speech Recognition Through the use of Noise-Compensated Hidden Markov Models", PhD Thesis, University of London, 1994.
19. Ayer, C. M., "A Discriminatively Derived Linear Transform Capable of Improving Speech Recognition Accuracy," PhD Thesis, London University, 1992.
20. Naylor, P. A., "A Model of Voiced Speech Production Incorporating Source-Tract Interaction and its Application to Speech Analysis and Synthesis," PhD Thesis, London University, 1990.

External Examining

1. External Examiner: Cambridge University, Engineering Dept – Part IIA, 2006 – 2009
2. External Examiner: University College London, Phonetics & Linguistics Dept, 1987-1991

PhD Examining

1. PhD: Philip Harding: "Model-Based Speech Enhancement", Univ or East Anglia, 2013
2. PhD: Belinda Schwerin: "Modulation Domain Based Processing for Speech Enhancement", Griffith University, Queensland, Australia, 2013
3. PhD: Can Ozelci: "Tracking and Estimation Algorithms for Bearings Only Measurements", Imperial College London, 2012
4. PhD: Andriy Gelman: "Delay Compression of Multiview Images using a Sparse Layer-based Representation", Imperial College London, 2012
5. PhD: Justin Wong: "Delay Measurements and Self Characterisation on FPGAs", Imperial College London, 2011
6. PhD: Mai Xu, "3D Scene Interpretation with the Tower of Knowledge", Imperial College London, 2010
7. PhD: Mark Thomas, "Glottal-Synchronous Speech Processing", Imperial College London, 2010
8. PhD: Varit Chaisinthop, "Centralized and Distributed Semi-Parametric Compression of Piecewise Smooth Functions", Imperial College London, 2010
9. PhD: Chandra Raut, "Discriminative Adaptive Training and Bayesian Inference for Speech Recognition", Cambridge University, 2010
10. PhD: Jimi Wen: "Reverberation: Models, Estimation and Applications", Imperial College London, 2009
11. PhD: Georgios Tzimiropoulos: "A fast gradient-based approach to image template matching", Imperial College London, 2009
12. PhD: Qiang Liu: "Data Reuse and Parallelism in hardware compilation", Imperial College London, 2008
13. PhD: Andreas Varnevas: "Signal Processing Methods for EEG Data Classification", Imperial College London, 2008
14. PhD: Arantza del Pozo: "Voice Source and Duration Modelling for Voice Conversion and Speech Repair", University of Cambridge, 2008
15. PhD: Christina Orphanidou: "Voice Morphing", University of Oxford, 2007
16. PhD: Alastair Smith: "Heterogeneous Reconfigurable Architecture Design: An Optimisation Approach", Imperial College London, 2007
17. PhD: Pancham Shukla: "Sampling Schemes for Multidimensional Nonbandlimited Signals", Imperial College London, 2007
18. PhD: Nicolas Chetry: "Computer Models for Musical Instrument Identification", Queen Mary, Univ of London, 2006
19. PhD: Khe Chai Sim: "Structured Precision Matrix Modelling for Speech Recognition", Univ of Cambridge, 2006
20. PhD: Nina Thornhill: "Detection and Diagnosis of Distributed Disturbances in Chemical Processes", University College London, 2005
21. PhD: Andy Khong: "Adaptive Algorithms Employing Tap Selection for Single Channel and Stereophonic Acoustic Echo Cancellation", Imperial College, 2005
22. PhD: Daniel Povey: "Discriminative Training for Large Vocabulary Speech Recognition", Cambridge University, 2004
23. PhD: Henry Styles: "Compilation and Modelling of Reconfigurable Data Systems", Dept of Computing, Imperial College, 2004

Lecturing

1. "Mathematics" – Ug1 course, 2013-
2. "Digital Signal Processing and Digital Filters" – Ug4/MSc course, 2011-
3. "Analysis of Circuits" – Ug1 course, 2008-
4. "Information Theory" – Ug4/MSc course, 2003-2007
5. "Real-Time Digital Signal Processing" – Ug3/MSc course, 1997-1999
6. "Speech Processing" – Ug4/MSc course, 1994-2000
7. "Digital Circuits II" – Ug2, 1991-2010
8. "Electrical Engineering" – Ug1, 1984-1992

Awards

1. Engineering Faculty Teaching Award 2010

External Professional Activities

1. Papers co-chair AES Audio Forensics Conf 2014
2. Track chair EUSIPCO 2012
3. TPC member EUSIPCO 2011
4. Track chair EUSIPCO 2008