

CHRISTINE EVERS

Curriculum Vitae

CONTACT DETAILS

Imperial College London, Dept. Electrical and Electronic Engineering
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PROFESSIONAL APPOINTMENTS

2017 to date EPSRC Fellow
Imperial College London, Dept. Electrical and Electronic Engineering, UK
2014 – 2016 Research Associate
Imperial College London, Dept. Electrical and Electronic Engineering, UK
2012 – 2014 Senior Systems Engineer / Target Tracking Team Lead
Selex Electronic Systems, Edinburgh, UK
2010 – 2012 Systems Engineer
Selex Electronic Systems, Edinburgh, UK
2009 – 2010 Research Fellow
University of Edinburgh, School of Engineering, UK

EDUCATION

2006 – 2010 PhD, Statistical Signal Processing
University of Edinburgh, School of Engineering, Edinburgh, UK
2005 – 2006 MSc, Signal Processing and Communications (with distinction)
University of Edinburgh, UK
2002 – 2005 BSc, Electrical Engineering and Computer Science
Jacobs University Bremen, Germany
2004 Research Internship
Keio University, Mobile Communications, Yokohama, Japan

AWARDS

2017 Keynote Speech, “Bayesian Learning for Robot Audition”
IEEE Joint Workshop on Hands-free Speech Communication and Microphone
Arrays, San Francisco, CA
2017 Keynote Speech, “Acoustic Scene Mapping for Robot Audition”
UK Speech, Cambridge, UK
2017 Best paper award
I. D. Gebru, C. Evers, P. A. Naylor, and R. Horaud, “Audio-visual tracking by
density approximation in a sequential Bayesian filtering framework,” Proc. Joint
Workshop on Hands-free Speech Communication and Microphone Arrays
(HSCMA), San Francisco, CA, 2017.
2006 – 2010 University of Edinburgh Research Scholarship
2006 German Academic Exchange Service (DAAD) PhD Research Scholarship
2006 IEEE Communications Society UK & RI Best MSc Project Prize

FELLOWSHIPS AND GRANTS

- 2017 to date EPSRC Fellowship, “Acoustic Signal Processing and Scene Mapping for Socially Assistive Robots” (EP/P001017/1)
Role: Principal Investigator, Funder: EPSRC, Grant Value: £406,018, Duration: 36 months, Institution: Imperial College London, Dept. Electrical and Electronic Engineering
- 2009 – 2010 EPSRC Grant, “Joint Blind Enhancement and Passive Source Localisation of Acoustic Signals” (EP/H012699/1)
Role: Co-author / Named Research Fellow, Funder: EPSRC / DSTL, Grant Value: £95,380, Duration: 12 months, Institution: University of Edinburgh, School of Engineering

INVITED TALKS

- 2017 “Bayesian Learning for Robot Audition,” Dept. Medical Physics and Acoustics, Universität Oldenburg, Germany
- 2017 “Acoustic Scene Mapping for Robot Audition,” Institute of Sound and Vibration Research, University of Southampton, UK
- 2017 “Bayesian Learning for Robot Audition,” Multimedia Communications and Signal Processing, Friedrich Alexander Universität zu Erlangen, Germany
- 2016 “Acoustic scene mapping for robot audition,” Dept. Electrical and Computer Engineering, Ben-Gurion University of the Negev, Beer-Sheva, Israel
- 2016 “Acoustic scene mapping for robot audition,” Faculty of Engineering, Bar-Ilan University, Tel Aviv, Israel
- 2015 “Acoustic scene mapping for human-robot interaction,” Institute of Communications Systems, RWTH Aachen, Germany
- 2015 “Localisation and bearing-only acoustic tracking of moving speakers for robot audition,” Perception Group, INRIA, Grenoble, France
- 2009 “Blind speech dereverberation,” Royal Society of Engineering Research Pool in Engineering, Edinburgh, UK
- 2008 “Acoustic modelling for blind speech dereverberation using Sequential Monte Carlo methods,” Computer-Based Signal Processing Workshop, Microsoft Research, Redmond, WA

CONFERENCE TUTORIALS

- 2015 H. Löllmann, C. Evers, and R. Horaud, “Embodied audition for robots,” European Signal Processing Conference, Nice, France
- 2015 H. Löllmann, C. Evers, and R. Horaud, “Embodied audition for robots,” Softbank Robotics, Paris, France
- 2014 P. A. Naylor, C. Evers, and A. H. Moore, “Speech dereverberation,” AES Conference on Audio Forensics, London, UK
- 2010 P. A. Naylor, C. Evers, and E. A. P. Habets, “Speech dereverberation,” European Signal Processing Conference, Aalborg, Denmark

PROFESSIONAL ACTIVITIES

External Committee Memberships

- 2016 to date Elected Member, IEEE Technical Committee on Audio and Acoustic Signal Processing (AASP)
- 2017 to date Member of organizing committee, IEEE-AASP Data Challenge on Acoustic Source Localisation and Tracking

Conference and Special Session Organization

- 2018 Member of organizing committee as Awards Chair, IEEE International Workshop on Acoustic Signal Enhancement, Tokyo, Japan
- 2018 Member of organizing committee, London Workshop on Signal Processing Theory and Methods, UK.
- 2018 Satellite Workshop Co-organizer / Chair, "LOCATA Challenge Workshop," Intl. Workshop on Acoustic Signal Enhancement (IWAENC), Tokyo, Japan
- 2018 Member of Student Awards Committee, IEEE Sensor Array and Multichannel Signal Processing Workshop, Sheffield, UK
- 2018 Special Session Co-organizer / Chair, "Localization for Audio Applications," IEEE Sensor Array and Multichannel Signal Processing Workshop, Sheffield, UK
- 2017 Member of organizing committee as Demonstrations Chair, IEEE Workshop on Applications of Signal Processing to Audio and Acoustics, New Paltz, NY
- 2017 Technical Area Subchair, "Audio Systems and Transducers," IEEE Intl. Conf. Acoustics, Speech and Signal Processing, New Orleans, LA
- 2016 Session Chair, "Noise Modeling and Signal Enhancement," IEEE Intl. Conf. Acoustics, Speech and Signal Processing, Shanghai, China
- 2015 Session Chair, "Audio and Speech Source Separation," European Signal Processing Conference, Nice, France
- 2015 Session Chair, "Audio and Acoustic Signal Processing," IEEE Intl. Conf. Digital Signal Processing, Singapore

Professional Memberships

- 2016 to date Senior Member, IEEE
- 2015 to date Member, European Association for Signal Processing

Reviewing

- Journals IEEE Transactions on Signal Processing; IEEE Transactions on Audio, Speech and Language Processing; IEEE Transactions on Multimedia; IEEE Transactions on Robotics; IEEE Robotics and Automation Letters; Elsevier Robotics and Autonomous Systems.
- Conferences IEEE Intl. Conf. Acoustics, Speech and Signal Processing (ICASSP); European Signal Processing Conference (EUSIPCO); IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA); International Conference on Information Fusion (FUSION); International Workshop on Acoustic Echo and

Noise Control (IWAENC); IEEE Intl. Conf. Intelligent Robots (IROS); Intl. Conf. Latent Variable Analysis and Signal Separation (LVA/ICA).

TEACHING

PhD Examination and Supervision

- 2018 Member of PhD thesis defence committee (examiner)
Candidate: I.-D. Gebru, Thesis: "Audio-Visual Analysis in the Framework of Humans Interacting with Robots," Institution: INRIA Grenoble Rhône-Alpes / École Doctorale Mathématiques, Sciences et Technologies de l'Information, Informatique
- 2018 to date Co-Supervisor. Candidate: Aidan Hogg, Institution: Imperial College London, Dept. Electrical and Electronic Engineering
- 2017 Member of PhD thesis defence committee
Candidate: G. Bustamante, Thesis: "Mouvement Actif pour la Localisation Binaurale de Sources Sonores en Robotique," Institution: Laboratoire d'analyse et d'architecture des systèmes du CNRS, Toulouse
- 2015 to date Co-Supervisor. Candidate: C. Papayannis, Institution: Imperial College London, Dept. Electrical and Electronic Engineering

Undergraduate Supervision

- 2016 – 2017 MEng Final Year Project, Imperial College London, Dept. Electrical and Electronic Engineering
Student: J. Choo, Project: "Real-time tracking of acoustic sound sources using visual-odometric measurements from the cameras of a robot"
- 2015 – 2016 MEng Final Year Project, Imperial College London, Dept. Electrical and Electronic Engineering
Student: D. Angelov, Project: "Informative Path Planning for Human-Robot Interaction"
- 2015 MEng Summer Internship, Imperial College London, Dept. Electrical and Electronic Engineering
Student: B. Liu, Project: "Informative path planning for robot audition"
- 2014 – 2015 MEng Final Year Project, Imperial College London, Dept. Electrical and Electronic Engineering
Student: E. Yip, Project: "3D Rendering of acoustic maps for robot audition"

Lectures and Tutorials

- 2016 Lecture on Linear Predictive Coding as part of "Speech Processing" module, MEng Electrical and Electronic Engineering Imperial College London (approx. 30 students)
- 2015 First-year tutorials, MEng Electrical and Electronic Engineering Imperial College London (approx. 3 students)

- 2015 Lecture on Linear Predictive Coding as part of “Speech Processing” module, MEng Electrical and Electronic Engineering Imperial College London (approx. 30 students)
- 2013 Lecture series on Target Tracking for RADAR, Selex Electronic Systems (approx. 20 engineers across two commercial fighter jet programmes)
- 2009 Undergraduate tutorials for “Engineering Mathematics” module, MEng Electronics and Electrical Engineering, University of Edinburgh (approx. 5 students)
- 2009 – 2010 Postgraduate tutorials for “Statistical Signal Processing” module, MSc Signal Processing and Communications, University of Edinburgh (approx. 20 students)
- 2009 - 2010 Undergraduate tutorials for “Signals and Communication Systems” module, MEng Electronics and Electrical Engineering (approx. 30 students)
- 2007 – 2009 Matlab Laboratories for “Image Processing” module, MSc Signal Processing and Communications, University of Edinburgh (approx. 20 students)

Training

- 2018 Introduction to Assessment for Learning, Educational Development Unit, School of Professional Development, Imperial College London

PUBLIC ENGAGEMENT

- 2016 Co-presenter, “Interaction with Robots,” STEM Event, Abbey Junior School, Reading, UK
- 2015 Co-presenter, “Interaction with Sound in a 3D World,” Royal Society Summer Science Exhibition, London, UK

PUBLICATIONS

Journals

- 2018 **C. Evers**, E. A. P. Habets, S. Gannot, and P. A. Naylor, "DoA Reliability for Distributed Acoustic Tracking", IEEE Signal Processing Letters, vol. 25, no. 9, pp. 1320-1324, Sep. 2018.
DOI: [10.1109/LSP.2018.2849579](https://doi.org/10.1109/LSP.2018.2849579)
- 2018 **C. Evers** and P. A. Naylor, "Acoustic SLAM," IEEE Trans. Audio, Speech and Language Processing, vol. 26, no. 9, pp. 1484-1498, Sep. 2018.
DOI: [10.1109/TASLP.2018.2828321](https://doi.org/10.1109/TASLP.2018.2828321)
- 2018 **C. Evers** and P. A. Naylor, "Optimized Self-Localization for SLAM in Dynamic Scenes using Probability Hypothesis Density Filters," IEEE Transactions on Signal Processing, vol. 66, no. 1, pp. 863-878, Feb. 2018. DOI: [10.1109/TSP.2017.2775590](https://doi.org/10.1109/TSP.2017.2775590)
- 2016 A. H. Moore, **C. Evers**, and P. A. Naylor, "Direction of arrival estimation in the spherical harmonic domain using subspace pseudo-intensity vectors," IEEE/ACM Transactions on Audio, Speech, and Language Processing, vol. 25, no. 1, pp. 178-192, Jan. 2017. DOI: [10.1109/TASLP.2016.2613280](https://doi.org/10.1109/TASLP.2016.2613280)
- 2011 **C. Evers** and J. R. Hopgood, "Multichannel online blind speech dereverberation with marginalization of static observation parameters in a Rao-Blackwellized particle filter," Journal of Signal Processing Systems, vol. 63, no. 3, pp. 315–332, 2011. DOI: [10.1007/s11265-009-0442-4](https://doi.org/10.1007/s11265-009-0442-4)
- 2008 **C. Evers** and J. R. Hopgood, "Parametric modelling for single-channel blind dereverberation of speech from a moving speaker," IET Signal Processing, vol. 2, no. 2, pp. 59–74, Jun. 2008. DOI: [10.1049/iet-spr:20070046](https://doi.org/10.1049/iet-spr:20070046)
- 2007 J. R. Hopgood, **C. Evers**, and J. Bell, "Bayesian single channel blind speech dereverberation using Monte Carlo methods," The Journal of the Acoustical Society of America, vol. 123, no. 5, pp. 3586–3586, 2007. DOI: [10.1121/1.2934710](https://doi.org/10.1121/1.2934710)

Book Chapters

- 2010 J. R. Hopgood, **C. Evers**, and S. Fortune, "Bayesian single channel blind dereverberation of speech from a moving talker," in Speech Dereverberation, P. A. Naylor and N. D. Gaubitch, Eds. Springer, 2010, ch. 8, pp. 219–268. DOI: [10.1007/978-1-84996-056-4_8](https://doi.org/10.1007/978-1-84996-056-4_8)

Thesis

- 2010 C. Evers, "Blind dereverberation of speech from moving and stationary speakers using sequential Monte Carlo methods," Ph.D. dissertation, The University of Edinburgh, Jun. 2010. URI: [1842/4761](https://www.ed.ac.uk/1842/4761)

Conferences (peer-reviewed)

- 2018 **C. Evers**, H. Löllmann, H. Mellmann, A. Schmidt, H. Barfuss, P. A. Naylor, and W. Kellermann, "LOCATA Challenge – Evaluation Tasks and Measures", submitted to Proc. Proc. Intl. Workshop Acoust. Signal Enhancement (IWAENC), Tokyo, Japan, Sep. 2018.
- 2018 H. Löllmann, **C. Evers**, A. Schmidt, H. Mellmann, H. Barfuss, P. A. Naylor, and W. Kellermann, "The LOCATA Challenge Data Corpus for Acoustic Localization and

- Tracking,” in Proc. IEEE Sensor Array and Multichannel Signal Processing Workshop (SAM), Sheffield, UK, Jul. 2018.
- 2017 C. Papayannis, **C. Evers**, and P. A. Naylor, “Sparse parametric modeling of the early part of acoustic impulse responses,” in Proc. European Signal Processing Conf. (EUSIPCO), Kos Island, Greece, Aug. 2017. DOI: [10.23919/EUSIPCO.2017.8081293](https://doi.org/10.23919/EUSIPCO.2017.8081293)
- 2017 **C. Evers**, B. Rafaely, and P. A. Naylor, “Speaker tracking in reverberant environments using multiple directions of arrival,” in Proc. Joint Workshop on Hands-free Speech Communication and Microphone Arrays (HSCMA), San Francisco, CA, Mar. 2017. DOI: [10.1109/HSCMA.2017.7895568](https://doi.org/10.1109/HSCMA.2017.7895568)
- 2017 I. D. Gebru, **C. Evers**, P. A. Naylor, and R. Horaud, “Audio-visual tracking by density approximation in a sequential Bayesian filtering framework,” in Proc. Joint Workshop on Hands-free Speech Communication and Microphone Arrays (HSCMA), San Francisco, CA, Mar. 2017. DOI: [10.1109/HSCMA.2017.7895564](https://doi.org/10.1109/HSCMA.2017.7895564)
- 2017 **C. Evers**, Y. Dorfan, S. Gannot, and P. A. Naylor, “Source tracking using moving microphone arrays for robot audition,” in Proc. IEEE Intl. Conf. on Acoustics, Speech and Signal Processing (ICASSP), New Orleans, LA, Mar. 2017. DOI: [10.1109/ICASSP.2017.7953337](https://doi.org/10.1109/ICASSP.2017.7953337)
- 2017 C. Papayiannis, **C. Evers**, and P. A. Naylor, “Discriminative feature domains for reverberant acoustic environments,” in Proc. IEEE Intl. Conf. on Acoustics, Speech and Signal Processing (ICASSP), New Orleans, LA, Mar. 2017. DOI: [10.1109/ICASSP.2017.7952257](https://doi.org/10.1109/ICASSP.2017.7952257)
- 2016 **C. Evers**, A. H. Moore, and P. A. Naylor, “Localization of moving microphone arrays from moving sound sources for robot audition,” in Proc. European Signal Processing Conf. (EUSIPCO), Budapest, Hungary, Aug. 2016. DOI: [10.1109/EUSIPCO.2016.7760400](https://doi.org/10.1109/EUSIPCO.2016.7760400)
- 2016 **C. Evers**, Y. Dorfan, S. Gannot, and P. A. Naylor, “Speaker localization with moving microphone arrays,” in Proc. European Signal Processing Conf. (EUSIPCO), Budapest, Hungary, Aug. 2016. DOI: [10.1109/EUSIPCO.2016.7760399](https://doi.org/10.1109/EUSIPCO.2016.7760399)
- 2016 A. H. Moore, **C. Evers**, and P. A. Naylor, “2D direction of arrival estimation of multiple moving sources using a spherical microphone array,” in Proc. European Signal Processing Conf. (EUSIPCO), Budapest, Hungary, Aug. 2016. DOI: [10.1109/EUSIPCO.2016.7760442](https://doi.org/10.1109/EUSIPCO.2016.7760442)
- 2016 **C. Evers**, A. H. Moore, and P. A. Naylor, “Acoustic simultaneous localization and mapping (a-SLAM) of a moving microphone array and its surrounding speakers,” in Proc. IEEE Intl. Conf. on Acoustics, Speech and Signal Processing (ICASSP), Shanghai, China, Mar. 2016. DOI: [10.1109/ICASSP.2016.7471626](https://doi.org/10.1109/ICASSP.2016.7471626)
- 2015 **C. Evers**, J. Sheaffer, A. H. Moore, B. Rafaely, and P. A. Naylor, “Bearing-only acoustic tracking of moving speakers for robot audition,” in Proc. IEEE Intl. Conf. Digital Signal Processing (DSP), Singapore, Jul. 2015. DOI: [10.1109/ICDSP.2015.7252071](https://doi.org/10.1109/ICDSP.2015.7252071)
- 2015 A. H. Moore, **C. Evers**, and P. A. Naylor, “Multichannel equalisation for high-order spherical microphone arrays using beamformed channels,” in Proc. IEEE Intl. Conf. Digital Signal Processing (DSP), Singapore, Jul. 2015. DOI: [10.1109/ICDSP.2015.7252072](https://doi.org/10.1109/ICDSP.2015.7252072)
- 2015 A. H. Moore, **C. Evers**, and P. A. Naylor, “Direction of arrival estimation using pseudo-intensity vectors with direct-path dominance test,” in Proc. European Signal Processing Conference (EUSIPCO), Nice, Aug. 2015. DOI: [10.1109/EUSIPCO.2015.7362794](https://doi.org/10.1109/EUSIPCO.2015.7362794)
- 2014 **C. Evers**, A. H. Moore, and P. A. Naylor, “Multiple source localisation in the spherical harmonic domain,” in Proc. Intl. Workshop Acoust. Signal Enhancement (IWAENC), Nice, France, Jul. 2014. DOI: [10.1109/IWAENC.2014.6954298](https://doi.org/10.1109/IWAENC.2014.6954298)

- 2010 **C. Evers** and J. R. Hopgood, "Articulatory based speech models for blind speech dereverberation using sequential Monte Carlo methods," in Proc. European Signal Processing Conf. (EUSIPCO), Aug. 2010
- 2009 **C. Evers** and J. R. Hopgood, "Marginalization of static observation parameters in a Rao-Blackwellized particle filter with application to sequential blind speech dereverberation," in Proc. European Signal Processing Conf. (EUSIPCO), Aug. 2009
- 2008 **C. Evers**, J. R. Hopgood, and J. Bell, "Acoustic models for online blind source dereverberation using sequential Monte Carlo methods," in Proc. IEEE Intl. Conf. on Acoustics, Speech and Signal Processing (ICASSP), Mar. 2008. DOI: [10.1109/ICASSP.2008.4518680](https://doi.org/10.1109/ICASSP.2008.4518680)
- 2008 **C. Evers**, J. R. Hopgood, and J. Bell, "Blind speech dereverberation using batch and sequential Monte Carlo methods," in Proc. Intl. Symp. on Circuits and Systems (ISCAS), May 2008, pp. 3226–3229. DOI: [10.1109/ISCAS.2008.4542145](https://doi.org/10.1109/ISCAS.2008.4542145)
- 2007 J. R. Hopgood and **C. Evers**, "Block-based TVAR models for single-channel blind dereverberation of speech from a moving speaker," in Proc. IEEE/SP Workshop on Statistical Signal Processing (SSP), Aug. 2007, pp. 274–278. DOI: [10.1109/SSP.2007.4301262](https://doi.org/10.1109/SSP.2007.4301262)
- 2006 E. Foutekova, **C. Evers**, and H. Haas, "Semi-analytical model of interference in CDMA-TDD using random time slot hopping," in Proc. IEEE Vehicular Technology Conference (VTC), Sep. 2006. DOI: [10.1109/VTCF.2006.219](https://doi.org/10.1109/VTCF.2006.219)
- 2005 **C. Evers**, R. Esmailzadeh, H. Haas, and M. Nakagawa, "Performance of a hybrid TDD-CDMA system with random slot allocation (RSA) in comparison with an equivalent FDD-CDMA system," in Proc. IST Mobile Wireless Communications Summit, June 2005

Conferences (non-reviewed)

- 2016 **C. Evers**, A. H. Moore, and P. A. Naylor, "Towards informative path planning for acoustic SLAM," in Proc. DAGA, Aachen, Germany, Mar. 2016
- 2006 J. R. Hopgood and **C. Evers**, "Towards single-channel blind dereverberation of speech from a moving speaker," in IMA Intl. Conf. Math. Sig. Proc., Dec. 2006