

Professional experience

- 2021– **Associate Professor of AI & Biodiversity**, *Tilburg University & Naturalis Biodiversity Center, NL*.
- 2019–2021 **Lecturer**, *School of Electronic Engineering and Computer Science, Queen Mary University of London*.
- 2017–2019 **Senior researcher**, *School of EECS, Queen Mary University of London*.
- 2014–2017 **EPSRC research fellow**, *School of EECS, Queen Mary University of London*.
“Structured machine listening for soundscapes with multiple birds” fellowship project (EPSRC-funded, 60 months).
- 2010–2014 **Postdoctoral research assistant**, *School of EECS, Queen Mary University of London*.
- 2002–2006 **Web technology developer and faculty information support officer**, *UCL, Life Sciences Faculty*.

Education

- 2006–2010 **PhD**, *Electronic Engineering and Computer Science, Queen Mary University of London (QMUL)*.
- 2002–2005 **Postgraduate Certificate**, *University College London (UCL)*, Learning Technologies Research.
- 1997–2000 **1st class BA hons.**, *University of Cambridge*, Natural Sciences (History and Philosophy of Science).

Key publications

- J. H. Rasmussen, D. Stowell, and E. F. Briefer, “Sound evidence for biodiversity monitoring,” *Science*, vol. 385, no. 6705, pp. 138–140, 2024.
- I. Nolasco, S. Singh, ..., and D. Stowell. “Learning to detect an animal sound from five examples” *Ecological Informatics*, vol.77, 102258, Nov 2023.
- M. Faiß and D. Stowell. “Adaptive representations of sound for automatic insect recognition” *PLOS Computational Biology*, vol.19(10), e101154, Oct 2023.
- W. Wilkinson, M. Riis Andersen, J. Reiss, D. Stowell, and A. Solin, “End-to-end probabilistic inference for nonstationary audio analysis,” in *Proc. International Conference on Machine Learning (ICML)*, 2019.
- D. Stowell, Y. Stylianou, M. Wood, H. Pamula, and H. Glotin, “Automatic acoustic detection of birds through deep learning: the first bird audio detection challenge,” *Methods in Ecology and Evolution* vol. 10 (3), 2019.
- D. Stowell, L.F. Gill and D. Clayton, “Detailed temporal structure of communication networks in groups of songbirds,” *Journal of the Royal Society Interface*, vol.13(119), 2016.
- D. Stowell, D. Giannoulis, E. Benetos, M. Lagrange and M. D. Plumbley, “Detection and Classification of Audio Scenes and Events,” *IEEE Transactions on Multimedia*, vol.17(10), p. 1733-1746, 2015.
—*The #1 most-viewed paper in this journal, in both 2016 and 2017*
- D. Stowell and M. D. Plumbley, “Segregating event streams and noise with a Markov renewal process model,” *Journal of Machine Learning Research*, vol. 14, pp. 1891–1916, Jul 2013.

Click on the titles! For latest pre-prints please see http://arxiv.org/a/stowell_d_1, or my *Google Scholar*.

PhD students supervised

- 2024– Céline Angonin, “Massively multi-task deep learning for wildlife sound monitoring”
- 2024– Vincent Kather, “Identifying unknown species and unknown sounds using machine learning”
- 2024– Ugochukwu Orji, “AI power load and renewable energy forecasting in electricity grids”
- 2020– Shubhr Singh, “New mathematical methods in machine listening”
- 2020– Inês de Almeida Nolasco, “Automatic acoustic identification of individual animals in the wild”
- 2017–2020 Delia Fano Yela, “Signal processing and graph theory methods for sound source separation”
- 2016–2019 Will Wilkinson, “Gaussian process modelling for audio signals”
- 2015–2019 Pablo Alvarado Duran, “Probabilistic time-domain music transcription and source separation”
- 2015–2019 Veronica Morfi, “Automatic detection and classification of bird sounds in low-resource wildlife audio data”

Funding secured

- 2024 **€145,000 (of €1.3M)**, *EU Biodiversa+*, TABMON: Towards a transnational acoustic biodiversity monitoring network (Co-I).
- 2023 **€2.7M**, *Horizon Europe MSCA Doctoral Network*, BioacAI: Bioacoustic AI for wildlife protection.

- 2022 **€220,000 (of €5M)**, *Horizon Europe*, GUARDEN: Safeguarding biodiversity ecosystem services (Co-I).
- 2022 **€660,000 (of €5M)**, *Horizon Europe*, MAMBO: Modern approaches to monitoring biodiversity (Co-I).
- 2022 **€6,875**, *Lorentz Center (NL)*, Workshop: Full-Stack Bioacoustics.
- 2019 **£50,000**, *Alan Turing Institute (UK)*, Solar photovoltaic nowcasting via machine vision and open data.
- 2018 **£3,000**, *Alan Turing Institute (UK)*, VIHAR 2019 workshop.
- 2017 **£526,870**, *BBSRC (UK)*, Machine Learning for Birdsong Learning (Co-I).
- 2017 **£9,000**, *Captain Planet Foundation (US)*, Warblr Georgia (Co-I).
- 2015 **£20,000**, *EPSRC/QMUL (UK)*, Innovation Fund: Warblr.
- 2014 **£506,361**, *EPSRC (UK)*, Early Career Fellowship.

Plus earlier funding awards totalling £21,013, from PRS Foundation, QMUL, and Royal Academy of Engineering.

Teaching

- 2023– **Lecturer and module organiser**, BSc course “AI for Nature & Environment”, Tilburg University.
- 2019–2020 **Lecturer and module organiser**, MSc course “Deep learning for audio and music”, QMUL.
- 2011–2021 **Project supervisor**, MSc, MEng and BSc students, QMUL.
- 2020 **Guest lecturer**, WiSSAP 2020 Winter School on Speech and Audio Processing, India.
- 2019–2020 **Second examiner**, MSc course “Digital Signal Processing”, QMUL.
- 2019 **Guest lecturer**, MSc Digital Signal Processing with Computer Music, University of Cambridge.
- 2009–2011 **Guest lecturer**, MSc Digital Music, QMUL.
- 2007–2010 **Teaching assistant**, BSc module ‘Web Site Design and Authoring Tools’, QMUL.
- 2009 **Workshop leader**, Evening classes “Programming with SuperCollider”, London, New York, Berlin.
- 2002–2006 **Trainer**, IT sessions for academic and administrative staff, Life Sciences Faculty, UCL.

Academic activities

- societies Elected member of the International Bioacoustics Council (2017–).
Invited member and elected secretary of the VIHAR International Steering Committee (2020–).
Fellow of the Alan Turing Institute (UK) (2018–2022).
Volunteer member of the TDWG Audubon Core Maintenance Group (2020–).
- phd
examining Examiner for PhD theses in many countries. Recently:
 - University of Oxford (UK) 2024
 - University of Leiden (NL) 2023
 - University of Toulon (FR) 2022
 - KU Leuven (BE) 2022
Plus University of Bath (UK), Tampere University (FI), Queen Mary University of London (UK), University of Southampton (UK), University of Mons (BE), University of Copenhagen (DK).
- journals Academic editor, *Plos Computational Biology* (2020–).
Academic editor, *PeerJ Computer Science* (2015–).
Lead editor of special issue, *Remote Sensing in Ecology & Conservation*, “Ecoacoustics” (Wiley, 2020).
- conferences Special session lead organiser, *EUSIPCO 2024* (“Signal analysis for biodiversity”), France.
Special session co-organiser, *IBAC 2023* (“Computational methods in bioacoustics”), Japan.
Lead organiser, Lorentz Centre 5-day workshop “Full-stack bioacoustics”, 2022, the Netherlands.
Technical chair, *VIHAR 2021*, France.
Special session co-organiser, *IEEE IJCNN 2020* (“Deep learning for bioacoustics & crop science”), UK.
Lead organiser, *VIHAR 2019* (£9,000 budget; funded by the Alan Turing Institute), UK.
Special session chair, *IBAC 2019* (“Advanced computational methods [in bioacoustics]”), UK.
Special session lead organiser, *IEEE ICASSP 2019* (“Wildlife bioacoustics & signal processing”), UK.
Special session co-organiser, *ICEI 2018* (“Analysis of ecoacoustic recordings”), Germany.
Special session lead organiser, *EUSIPCO 2017* (“Bird audio signal processing”), Greece.
Special session lead organiser, *IBAC 2017* (“Machine learning methods in bioacoustics”), India.
Lead organiser, *Listening in the Wild 2015* (£3,050 budget: one-day research workshop).
Lead organiser, *Listening in the Wild 2013* (£3,604 budget: one-day research workshop).
Lead organiser, *SuperCollider Symposium 2012* (£18,000 budget: talks, workshops, concerts, exhibition).

- invited talks Invited talks in many countries (China, India, Sweden, Finland, France, Germany, UK, USA). Including:
- IEEE Signal Processing Society, webinar, October 2024
 - The 2nd BirdNet workshop, Germany, June 2024
 - International Bioacoustics Congress (IBAC) Online Symposium, Sep 2022
 - European Congress on Orthoptera Conservation, Netherlands, April 2022
 - RISE, Sweden, Feb 2022
 - KU Leuven, Belgium, Jan 2022
 - Institute of Biology Leiden (keynote lecture), University of Leiden, Netherlands, June 2021
 - University of Amsterdam (IBED), Netherlands, June 2021
 - Biotope, Munich, Germany, May 2021
 - Royal Society “Global Environmental Research Committee”, UK, Nov 2020
 - Heidelberg Multi-Species Bioacoustics Workshop, Germany, Nov 2019
 - Intelligent Sensing Summer School (invited opening lecture), QMUL, London, Aug 2018
 - University of Southern Denmark, Odense, Denmark, Feb 2018
 - Beijing University of Posts and Telecommunications (invited foreign expert), China, Oct 2017
 - Dagstuhl Seminar (one-week workshop), Germany, Oct 2016
- grant reviewing • Climate Change AI Innovation Grants (US/global), 2021 • Alan Turing Institute (UK) climate action grants, 2020 • Austrian Academy of Sciences (Austria), 2019 • Arts and Humanities Research Council (UK), 2018 • Bundesministerium für Bildung und Forschung (Germany), 2017 • Université Aix-Marseille (France), 2017 • Linz Institute of Technology (Austria), 2016
- journal reviewing Over 50 journal peer reviews including:
- Nature Ecology & Evolution • Nature Communications
 - Nature Scientific Data • Neural Computation • PNAS • Proc Royal Society B • IEEE Journal of Selected Topics in Signal Processing • IEEE Transactions on Multimedia • Journal of the Acoustical Society of America • Methods in Ecology and Evolution • Artificial Intelligence Review • Bioacoustics
 - Ecological Informatics • Sustainable Energy, Grids and Networks • Plos Computational Biology
- conference reviewing Over 100 conference peer reviews including:
- NeurIPS (Neural Information Processing Systems) • MLSP (Machine Learning and Signal Processing)
 - ICASSP (IEEE Int Conf Acoustics Speech & Sig Proc) • ISMIR (Int Conf Music Info Retrieval)
 - EUSIPCO (European Sig Proc Conf) • WASPAA (IEEE Workshop Acoustics Speech Audio Analysis)

Public engagement activities (selected)

- Sep 2023 Trouw newspaper (NL): Interview feature in Dutch national newspaper about Bioacoustic AI
- May 2023 VPRO Tegenlicht (NL): Guest speaker at Den Bosch Tegenlicht event “Stem van de Natuur”
- May 2023 Soundcamp Vogelklang (DE): Guest speaker at birdsong sound art festival
- Dec 2020 New Scientist: Quoted in article “Dr Dolittle machines: How AI is helping us talk to the animals”
- Feb 2020 Climate Home News: Article “One million solar panels! If only we knew where they were”
- Sep 2019 BBC Radio 4: interviewed on “Auditory illusions” BBC Radio 4 documentary (with Prof Trevor Cox)
- Mar 2019 Nature: interviewed in article “AI empowers conservation biology”
- Jul 2018 Science magazine “Watch out, birders: Artificial intelligence has learned to spot birds from their songs”
- May 2018 SoundCamp 2018 festival: ‘Animal Diplomacy Bureau’ event, live-action game for adults and children
- Mar 2017 BBC Radio 4: *The Today Programme* live interview about bird song and automatic recognition
- May 2016 SoundCamp 2016 festival: “Birds heard through bells” public music/art installation with Sarah Angliss
- Sep 2016 The Conversation: Article “We made an app to identify birds, & learned something odd about people”
- Aug 2015 BBC Radio 4: featured on *The World Tonight*

Plus many previous activities at venues such as the Science Museum, Cheltenham Science Festival, music festivals, schools.

Artistic projects (selected)

- 2018 **Animal diplomacy bureau**, *Public interactive event (commissioned from Kaylene Kau).*
- 2016 **Birds heard through bells**, *Birdsong automatically transcribed for robot bells (collaboration with Sarah Angliss).*
- 2014 **Momentum**, *Generative multimedia art installation (with United Visual Artists and Mira Calix) commissioned by the Barbican Centre, London..*