Andrew Mitchell

Soundscape and Acoustics Researcher

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Passionate and self-driven acoustics researcher with experience across a wide range of applications. My research interests include the classification of soundscapes, the application of traditional acoustic and psychoacoustic parameters to soundscape evaluation, and the development of a comprehensive and useful assessment procedure. I also lead industry / academic collaboration and outreach efforts, focussing on the effective and rigorous application of the Soundscape approach in practice.

EDUCATION

Sep 2018 – Current

PhD Acoustics & Environmental Design (ongoing)

University College London
Institute for Environmental Design & Engineering

Thesis title: Machine Learning and Regression Modelling of Dynamic Urban Soundscapes
Thesis supervisors: Prof. Jian Kang and Dr. Phil Symonds

Sep 2012 – Jun 2015

BSc (Hons.) Physics & Music, 2.1

Cardiff University
School of Physics and Astronomy

Dissertation title: The Physics of the Trombone Mouthpiece
Academic supervisor: Dr Bernard Richardson (Ret.)

PUBLICATIONS

Journal Papers

- **Mitchell, A.**, Oberman, T., Aletta, F., Erfanian, M., Kachlicka, M., Lionello, M., & Kang, J. (2020). The Soundscape Indices (SSID) Protocol: A Method for Urban Soundscape Surveys – Questionnaires with Acoustical and Contextual Information. *Applied Sciences, 10, 2397.* https://doi.org/10.3390/app10072397
- Aletta, F., Oberman, T., **Mitchell, A.**, Tong, H., & Kang, J. (2020). Assessing the changing urban sound environment during the COVID-19 lockdown period using short-term acoustic measurements, *Noise Mapping*, *7*(1), 123-134. doi: https://doi.org/10.1515/noise-2020-0011
- Erfanian, M., **Mitchell, A.**, Aletta, F., & Kang, J. (2020). Psychological Well-being, Age, and Gender can Mediate Soundscapes: A large sample study. Under review at *Journal of Environmental Psychology*. Pre-print: https://www.biorxiv.org/content/10.1101/2020.10.16.341834v4
- Lionello, M., Aletta, F. **Mitchell, A.**, & Kang, J. (2020). Introducing an internally-validated method for intervals correction on multiple Likert scales: a case study on an urban soundscape data collection instrument. Under review at *Front. Psychol. - Environmental Psychology*.
- Erfanian, M., **Mitchell, A.,** Kang, J., & Aletta, F. (2019). The Psychophysiological Implications of Soundscape: A Systematic Review of Empirical Literature and a Research Agenda. *International Journal of Environmental Research and Public Health*, *16*(19), 3533. https://doi.org/10.3390/ijerph16193533

Conference Papers

- Kang, J., Aletta, F., Oberman, T., Erfanian, M., Kachlicka, M., Lionello, M., & **Mitchell, A.** (2019). Towards soundscape indices. In *Proceedings of the 23rd International Congress on Acoustics* (pp. 2488–2495).

Published Abstracts

- **Mitchell, A.**, Oberman, T., Aletta, F., Lionello, M., & Kang, J. (2020). The Soundscape Indices (SSID) Protocol: A method for practical soundscape assessments in the city. *Acoustics 2020 IoA*.
- **Mitchell, A.,** & Kang, J. (2019). The spectral structure of acoustic time series can predict the perceptual assessment of urban soundscapes. In *The Journal of the Acoustical Society of America,* 146:4, p. 2795. https://doi.org/10.1121/1.5136681. [Invited Lecture]
- **Mitchell, A.,** et. al. (2019). Making cities smarter with new soundscape indices. In *The Journal of the Acoustical Society of America,* 146:4, p. 2873. https://doi.org/10.1121/1.5136970. [Invited Lecture]
- Aletta, F., Oberman, T., **Mitchell, A**., et. al. (2019). Associations between Soundscape Experience and Self-Reported Wellbeing in Open Public Urban Spaces: A Field Study. *The Lancet*, vol. 394, 2019, p. S17, doi:10.1016/S0140-6736(19)32814-4.
- Erfanian, M., **Mitchell, A.,** & Kang, J. (2019). The neurophysiology and physiology of soundscape: A review of the empirical literature. In *The 6th European Conference on Psychology & the Behavioral Sciences (ECP2019)* (pp. 1–2).

GRANTS AND AWARDS

Jan – Sept 2021	**Enrichment Scheme placement**, The Alan Turing Institute
June 2020	**Research Capital Investment Fund (RCIF)**, UKRI Research England
Dec 2019	**Best Paper Award,** ASA San Diego TC-Noise, 'Making cities smarter with new soundscape indices'
Dec 2019	**ECR Travel Grant**, UK Acoustics Network
2018 – 2021	**PhD Studentship,** ERC Advanced Grant no. 740696: Soundscape Indices – SSID
2019 – 2020	**Monolith Seed Funding**, UCL Culture Performance Lab

TEACHING EXPERIENCE

Teaching Assistant

- BACE1002 Building Physics & Environment (w/ Dr Samuel Stamp)
- BENV0094 Building Physics (w/ Dr Valentina Marincioni)
- BENV0119 Machine Learning for Smart Buildings (w/ Dr Phil Symonds)
- BENV0098 Urban Physics (w/ Dr Jon Taylor)

EXPERIENCE

Oct 2018 – Current

Doctoral Researcher

University College London
Institute for Environmental Design & Engineering

Primary research responsibility is to investigate machine learning and regression modelling of soundscapes based on acoustical and non-acoustical factors. As a team member on the SSID project group, practical responsibilities include:

of Soundscape in practice
- Design and implement a methodology framework for conducting soundscape assessments for use in research across the world
- Conduct soundscape recordings (comprising spatial audio, 360° video, sound level meter measurements, and in-depth questionnaires) at 40+ locations around the UK, US, and Europe
- Develop the database and data structure for the storage and publication of a large-scale soundscape recording database

- Coordinate collaboration with industrial and research partners to promote the implementation

Jun 2019 – Current

Soundscape Consultant / Acoustical Engineer

Hoare Lea, LLC, London, UK

As part of an extensive industry collaboration, provide leading edge insights from modern research on soundscapes and sound perception to better inform the design of the built environment. Currently leading the development of a unique and innovative method for assessing the sound experience of building occupants and designing a comprehensive soundscape rating metric. This ongoing project requires:

- Management of a suite of environmental quality meters
- Development of a bespoke occupant survey app
- Development of custom acoustic analysis tools and software
- Independent project management and technical service package development

Jun 2016 – Sep 2018

Acoustical Consultant

Newson Brown Acoustics, Santa Monica, CA

- Provided comprehensive technical reports on over 50 projects to architects, engineers, and contractors detailing acoustical recommendations throughout the process of building design
- Conducted extensive environmental noise surveys and performed detailed building envelope noise intrusion calculations
- Reviewed architectural, mechanical, electrical, and plumbing drawings to identify and address potential noise issues

Jul 2015 – Apr 2016

Junior Acoustical Consultant

Hayes McKenzie Partnership, Ltd., Machynlleth, Wales

- Utilised Cadna-A to carry out environmental noise impact assessments for more than 15 operational wind turbine projects and projects under development across Great Britain and Ireland
- Provided advice to clients on wind turbine development and operational noise issues as they arise and the application of current guidance, legislation, standards, and best practice in environmental noise
- Designed, adapted, and used bespoke noise analysis and processing programs in Python and Matlab

Jul 2013 – Aug 2013

Research Assistant

University of Illinois, Champaign-Urbana
Department of Agricultural Engineering

- Assisted Dr Prasanta Kalita in soil erosion analysis and control research, in order to obtain data on slope stability given various mulches, soil, and other organic slope coverings
- Developed, refined, and employed various experimental methods for the analysis of soil samples

ASSOCIATIONS

2018 – Current **Researcher and Advisory Board Member**
International Misophonia Research Network (IMRN)

2016 – Current **Associate Member**
Acoustical Society of America
Technical Committee: Architectural Acoustics

2015 – Current **Student Member**
Institute of Acoustics