

October 15th, 2022

Lior Arbel - CV

Music and Audio: Technology, Acoustics, Signal Processing, AI and Deep Learning

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Research Positions

- 2022 - present **Technion - Israel Institute of Technology**
Research Associate, Industrial Design, Faculty of Architecture and Town Planning
- 2020 - present **Ben Gurion University of the Negev/Facebook Reality Labs (Seattle)**
Postdoctoral researcher, Department of Electrical and Computer Engineering
Research: Virtual Audio Customization by Deep Neural Networks
- 2020 - 2021 **University of Le Mans, France**
Chateaubriand Fellowship postdoctoral researcher -
Laboratoire d'Acoustique de l'Université du Mans (LAUM)
Research: Assembly Kit of Musical Instruments for Musical Acoustics Education

Education

- 2015 - 2020 **Technion - Israel Institute of Technology**
PhD, Industrial Design, Faculty of Architecture and Town Planning
Thesis: Symbaline - an Active Wine Glass Instrument
- 2011 - 2015 **Technion - Israel Institute of Technology**
MSc, Industrial Design, Faculty of Architecture and Town Planning
Thesis: Novel Designs of Musical Instruments Based on Wine Glasses
- 2004 - 2009 **Technion - Israel Institute of Technology**
BSc, Electrical Engineering


Fellowships


Chateaubriand Fellowship, 2020, The French Embassy in Israel,
Awarded for research in Le Mans University, France



Peer Reviewed Publications


Arbel, L., Gautier, F. *LeMo: An Assembly Kit for Musical Acoustics Education*.
Submitted to Journal of New Music Research (accepted for publication, in print).

Arbel, L. *Aeolis: A Virtual Instrument Producing Pitched Tones With Soundscape Timbres*.
Proceedings of the International Conference on New Interfaces for Musical Expression (NIME),
Shanghai, China, 2021. [ [Link](#)], [ [Video link](#)]

Arbel, L., Ben-Hur, Z., Alon, D. L. & Rafaely, B. *Applied Methods for Sparse Sampling of Head-Related Transfer Functions*. Proceedings of the International Conference on Acoustics, Speech and Signal Processing (ICASSP), Toronto, Canada, 2021. [ [Link](#)]

Arbel, L., Schechner, Y. Y., & Amir, N. *The Symbaline - An Active Wine Glass Instrument with a Liquid Sloshing Vibrato Mechanism*. Proceedings of the International Conference on New Interfaces for Musical Expression (NIME), Porto Alegre, Brazil, 2019, 9–14. [ [Link](#)]

Arbel, L., Schechner, Y. Y., & Amir, N. *Symbaline: An Electromagnetically Actuated Wine Glass Instrument*. Journal of New Music Research, 2018, 47(5), 476-491. [ [Link](#)], [ [Video link](#)]

Arbel, L., Schechner, Y. Y., & Amir, N. *Wine Glass Sound Excitation by Mechanical Coupling to Plucked Strings*. Applied Acoustics, 2017, 124, 1-10. [ [Link](#)]

Other Conference Publications

Arbel, L. Symbaline concert and lecture,
Café des Sciences event, Institut Français d’Israël, Polly Bar, Tel Aviv, February 2020.

Arbel, L. & Amir, N. Symbaline concert and lecture,
Biennale du Son, La Mans, France, November 2019.

Arbel, L., Schechner, Y. Y., & Amir, N. *A Liquid Sloshing Vibrato Mechanism for the Symbaline; an Active Wine Glass Instrument*. The International Symposium on Music Acoustics (ISMA), 2019. Demo presentation. **Best demo award**.

Arbel, L., Schechner, Y. Y., & Amir, N. *An Electromagnet Based Wine Glass Instrument*. The International Symposium on Musical Acoustics (ISMA), 2017. Oral presentation.

Arbel, L., Schechner, Y. Y., & Amir, N. *Methods for Exciting Wine Glasses by Coupling to Plucked Strings*. Third Vienna Talk on Music Acoustics, 2015. Oral presentation.

Peer Reviewed Publications, as Co-author

Rafaely B., Tourbabin V., Habets E., Ben-Hur Z., Lee H., ..., **Arbel L.**, et al.
*Spatial audio signal processing for binaural reproduction
of recorded acoustic scenes – review and challenges.* Acta Acustica, 2022, 6, 47.

Teaching

- 2022 - present **Technion - Israel Institute of Technology,
Department of Humanities and Arts**
Adjunct Lecturer: Music and Technology (Original course, spring 2022)
- 2017 - present **Technion - Israel Institute of Technology,
Viterbi Faculty of Electricity Engineering**
Teaching Assistant: Auditory and Visual Systems (Graduate course, 2017-2020)
Undergraduate Project Supervisor: Various music technology projects (2022-present)

Employment and Commercial Cooperation

- 2022 - present **BIAD - Beijing Institute of Architectural Design**
Aeolis - Soundscape Music, commercial installation
Beijing Zhangjiawan Design Park, Future Design District
Currently under business development with T3 - Technion Technology Transfer
- 2021 - 2022 **Baya - Smart Construction**
Data scientist (AI and signal processing) - freelance consultant
- 2007 - 2015 **Intel (Haifa, Israel)**
Analog validation engineer

Reviewer

Meta Reviewer: International Conference on New Interfaces for Musical Expression (NIME),
Auckland, New Zealand, 2022.

Reviewer: Audio Mostly Conference, Trento, Italy, 2021.