

March 3rd, 2023

## Lior Arbel - CV

*Music and Audio: Technology, Acoustics, Signal Processing, AI, 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*.  
Journal of New Music Research, 2022. [ [Link](#)]

**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 Expressio (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. [[Link](#)]

## Teaching

- 2022 - present    **Technion - Israel Institute of Technology,  
Department of Humanities and Arts**  
Adjunct Lecturer: Music and Technology (Original course, spring 2022)
- 2017 - 2022    **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 - 2023    **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; Mexico City, Mexico, 2023.

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