January 3rd, 2022

Lior Arbel - CV

Music and Audio: Technology, Signal Processing, Machine and Deep Learning
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Research Experience

2020 - present	**Ben Gurion University of the Negev/Facebook Reality Labs (Seattle)** Postdoctoral researcher, Department of Electrical and Computer Engineering Research: Virtual Reality Audio Customization by Deep Neural Networks
2020	**University of Le Mans, France** Chateaubriand Fellowship postdoctoral researcher - Laboratoire d'Acoustique de l'Université du Mans (LAUM) Research: Electroacoustic Assembly System of Musical Instruments

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: New Designs of Musical Instruments Based on Wine Glasses
2004 - 2009	**Technion - Israel Institute of Technology** BSc, Electrical Engineering

Teaching

2022 - present	**Technion - Israel Institute of Technology,** **Department of Humanities and Arts** 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) Laboratory Instructor: High Speed Systems (Undergraduate lab, 2017-present)

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 (under review).

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.

Employment

2021 - present   **GoHigher - Smart Construction**
Data scientist - freelance consultant

2007 - 2015   **Intel (Haifa, Israel)**
Analog validation engineer

Reviews

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

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