

# Yochai Yemini

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## Summary

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Recently completed my Ph.D. studies in electrical engineering at Bar-Ilan University, specialising in audio-visual speech processing. Research experience spanning speech separation, speech enhancement, dereverberation, and generative speech synthesis. Published as lead author at top-tier venues including ICLR, ICASSP, and Interspeech. Seeking industry roles in deep learning for audio, computer vision, or NLP.

## Education

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### 2019 - 2025: Ph.D., Electrical Engineering, Bar-Ilan University

- Research area: Deep Learning Methods for Audio-Visual Scene Analysis
- Supervisors: Prof. Sharon Gannot and Dr. Ethan Fetaya
- Funded by the Bar-Ilan University President's Scholarship for Excellence, 2019–2023

### 2011: M.Sc., Electrical Engineering, Bar-Ilan University

- Graduated Magna Cum Laude
- Thesis: "Single Microphone Speech Separation Using Factorial HMMs and Manifold Learning"
- Supervisors: Prof. Sharon Gannot and Prof. Yosi Keller

### 2006 - 2010: B.Sc., Electrical Engineering, Bar-Ilan University

- Graduated Magna Cum Laude
- Faculty Prize for Outstanding Graduation Project

## Research Experience

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### 2023 - 2024: Research Intern, OriginAI

- Developed audio-visual deep learning methods for speech separation and dereverberation in challenging acoustic environments.

### 2021: Research Intern, Alexa ML, Amazon

- Designed novel approaches to improve wake-word detection accuracy for non-English accents, broadening Alexa's multilingual robustness.

## PUBLICATIONS

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- 1) **Y. Yemini**, Y. Ellinson, R. Ben-Ari, Sharon Gannot and E. Fetaya, "SSNAPS: Audio-Visual Separation of Speech and Background Noise with Diffusion Inverse Sampling", submitted to *IEEE Transactions on Audio, Speech, and Language Processing*.
- 2) **Y. Yemini**, R. Ben-Ari, Sharon Gannot and E. Fetaya, "Diffusion-based unsupervised audio-visual speech separation in noisy environments with noise prior". *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Barcelona, Spain, 2026.
- 3) **Y. Yemini**, A. Shamsian, L. Bracha, S. Gannot and E. Fetaya, "LipVoicer: Generating Speech from Silent Videos Guided by Lip Reading", *International Conference on Learning Representations (ICLR)*, 2024.

- 4) **Y. Yemini**, E. Fetaya, H. Maron and S. Gannot, "Scene-Agnostic Multi-Microphone Speech Dereverberation", *INTERSPEECH, 2021*.
- 5) I. Achituv, A. Navon, **Y. Yemini**, G. Chechik and E. Fetaya, "GP-Tree: A Gaussian Process Classifier for Few-Shot Incremental Learning", *International Conference on Machine Learning (ICML), 2021*.
- 6) **Y. Yemini**, S. E. Chazan, J. Goldberger and S. Gannot, "A Composite DNN Architecture for Speech Enhancement", *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Barcelona, Spain, 2020, pp. 841-845.
- 7) **Y. Yeminy**, Y. Keller and S. Gannot, "Single Microphone Speech Separation by Diffusion-Based HMM Estimation", *EURASIP Journal on Audio, Speech, and Music Processing*, 2016(1), 1-19.
- 8) **Y. Yeminy**, S. Gannot and Y. Keller, "Speech Enhancement Using a Multidimensional Mixture-Maximum Model", *International Workshop on Acoustic Signal Enhancement (IWAENC)*, Tel Aviv, Israel , 2010.

## **Technical Skills**

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**Languages:** Python, MATLAB, Verilog

**Frameworks & Libraries:** PyTorch, TensorFlow, Keras

**Research Areas:** Speech separation, speech enhancement, dereverberation, generative speech synthesis, audio-visual learning

## **Awards & Honours**

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- Bar-Ilan University President's Scholarship for Excellent PhD Students, 2019–2023
- Faculty of Engineering Prize for Outstanding Graduation Project, Bar-Ilan University, 2010
- Dean's List for Excellence, 2009 and 2010
- IDF Atuda Programme Excellence Scholarship, 2008 and 2009

## **Teaching**

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- Supervised B.Sc. graduation projects in video processing and deep learning (2019-2023)
- Teaching Assistant: Ordinary Differential Equations; Signals and Systems; Random Signals and Noise - Bar-Ilan University (2010, 2020)