

Aviv Shamsian

Mista2311@gmail.com | +972 (0)52-6134824 | [Github](#) | [LinkedIn](#) | [Scholar](#) | [Website](#)

Summary

Research Scientist with a PhD and first-author publications at leading ML conferences. Expertise in multi-task learning, learning in weight-space methods, and generative AI for speech. Skilled at translating research breakthroughs into large-scale production systems.

Education

- 2022 – 2025: **PhD in Machine Learning**, Faculty of Engineering, Bar Ilan University.
Thesis: Learning with Multiple Tasks, Advisors: Prof. Gal Chechik, Prof. Ethan Fetaya.
- 2019 – 2021: M.Sc - Electrical Engineering, supervised by Prof. Gal Chechik, Bar Ilan University.
- 2013 – 2017: Graduated B.Sc. - Medical Engineering, Afeka. GPA: 92, Dean's honor.

Experience

2023-Present: Data Science Tech Lead – aiOla

- Responsible for the technical design and architecture of data science projects, while also driving research through publications in top-tier speech conferences and innovation through patents to strengthen aiOla's IP.
- Designed and implemented a proprietary ASR model with zero-shot contextual biasing to jargon and domain-specific terms, inspired by an [ICASSP paper](#). This model powers aiOla's flagship product, delivering industry-grade performance with 93% multilingual transcription recall for jargon and domain-specific language. Deployed at scale, it achieves a 30% reduction in WER for industrial use cases and is used by hundreds of thousands of users worldwide.
- Developed a proprietary keyword-spotting model with open-vocabulary zero-shot capabilities inspired by the [AdaKWS ICASSP paper](#). Integrated into aiOla's flagship product, achieving >95% F1 on multilingual zero-shot recognition of domain-specific terminology.

2021-2023: Applied Scientist – Lab126 Amazon

- Designing, implementing, and deploying a human motion understanding model.
- Led the development of a fitness model for tracking and analyzing user exercises, providing personalized feedback. Drove the project from research and architecture exploration through experimentation, implementation, and deployment on mobile edge devices.

2019-2021: Chief Technical Advisor – DeepWrex

- In charge of leading a research team on cutting-edge deep learning research in the image restoration domain.

2019-2020: Data Scientist – DragonTail Systems

- Developing novel Machine learning and Deep learning approaches for recommendation systems and computer vision applications.
- Led the end-to-end project of segmenting different chicken pieces for KFC, resulting in lower food costs and improved customer service.

2016-2019: Machine Learning Researcher – spirCare Ltd

spirCare is a startup that develops a device for measuring the functional residual capacity.

- Developed machine learning-based models for estimation and regression problems.
- Algorithm developer, Matlab & Python environment - physiological signal processing.

Selected First Author Publications

Aviv Shamsian, Aviv Navon, Neta Glazer, Gill Hetz, Joseph Keshet. *Keyword-guided Adaptation of Automatic Speech Recognition*, **InterSpeech 2024**.

Aviv Shamsian, Aviv Navon, David W Zhang, Yan Zhang, Ethan Fetaya, Gal Chechik, Haggai Maron. *Improved Generalization of Weight Space Networks via Augmentations*, **ICML 2024**.

Aviv Shamsian, Aviv Navon, Neta Glazer, Kenji Kawaguchi, Gal Chechik, Ethan Fetaya. *Auxiliary Learning as an Asymmetric Bargaining Game*, **ICML 2023**.

Aviv Shamsian, Aviv Navon, Ethan Fetaya, Gal Chechik. *Personalized Federated Learning using Hypernetworks*, **ICML 2021**.

Aviv Shamsian, Ofri Kleinfeld, Amir Globerson, Gal Chechik. *Learning Object Permanence from Video*, **ECCV 2020**.

Other Publications

Neta Glazer, Aviv Navon, Yael Segal, **Aviv Shamsian**, Hilit Segev, Asaf Buchnick, Menachem Pirchi, Gil Hetz, Joseph Keshet. *UmbratTS: Adapting Text-to-Speech to Environmental Contexts with Flow Matching*, **ICML WMLA 2025**.

Yael Segal-Feldman, **Aviv Shamsian**, Aviv Navon, Gill Hetz, Joseph Keshet. *Whisper in Medusa's Ear: Multi-head Efficient Decoding for Transformer-based ASR*, **ICASSP 2025**.

Gil Ayache, Menachem Pirchi, Aviv Navon, **Aviv Shamsian**, Gill Hetz, Joseph Keshet. *WhisperNER: Unified open named entity and speech recognition*, **ASRU 2025**.

Aviv Navon, **Aviv Shamsian**, Yael Segal-Feldman, Neta Glazer, Gil Hetz, Yossi Keshet. *Target Speaker Extraction with Flow Matching*, **InterSpeech 2025**.

Aviv Navon, **Aviv Shamsian**, Ethan Fetaya, Gal Chechik, Nadav Dym, Haggai Maron. *Equivariant Deep Weight Space Alignment*, **ICML 2024**.

Yochai Yemini, **Aviv Shamsian**, Lior Bracha, Sharon Gannot, Ethan Fetaya. *LipVoicer: Generating Speech from Silent Videos Guided by Lip Reading*, **ICLR 2024**.

Rishub Tamirisa, Chulin Xie, Wenxuan Bao, Andy Zhou, Ron Arel, **Aviv Shamsian**. *Fedselect: Personalized Federated Learning with Customized Selection of Parameters for Fine Tuning*, **CVPR 2024**.

Aviv Navon, **Aviv Shamsian**, Neta Glazer, Gill Hetz, Joseph Keshet. *Open-Vocabulary Keyword-Spotting with Adaptive Instance Normalization*, **ICASSP 2024**.

Aviv Navon, **Aviv Shamsian**, Idan Achituve, Ethan Fetaya, Gal Chechik, Haggai Maron. *Equivariant Architectures for Learning in Deep Weight Spaces*, **ICML 2023 (Oral, top 2.3%)**.

Honglu Zhou, Asim Kadav, **Aviv Shamsian**, Shijie Geng, Farley Lai, Long Zhao, Ting Liu, Mubbasir Kapadia, Hans Peter Graf. *COMPOSER: Compositional Reasoning of Group Activity in Videos with Keypoint-Only Modality*, **ECCV 2022**.

Aviv Navon, **Aviv Shamsian**, Idan Achituve, Haggai Maron, Kenji Kawaguchi, Gal Chechik, Ethan Fetaya. *Multi-Task Learning as a Bargaining Game*, **ICML 2022**.

Aviv Navon, **Aviv Shamsian**, Gal Chechik, Ethan Fetaya. *Learning the Pareto Front with Hypernetworks*, **ICLR 2021**.

Idan Achituve, **Aviv Shamsian**, Aviv Navon, Gal Chechik, Ethan Fetaya. *Personalized Federated Learning with Gaussian Processes*, **NeurIPS 2021**.

Volunteering

2018-2023: "Big Brother" Project - As part of the Big Brother project, we accompany youth at risk and guide them.