

Curriculum Vitae

Joseph (Yossi) Keshet

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Personal Details

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Faculty of Electrical and Computer Engineering

Technion - Israel Institute of Technology

Haifa 3200003, Israel

Academic Degrees

- 2002 - 2008 Ph.D. in Computer Science, The School of Computer Science and Engineering, The Hebrew University, Jerusalem, Israel. Advisor: Yoram Singer
- 2000 - 2002 M.Sc. in Electrical Engineering, Department of Electrical Engineering – Systems, Tel-Aviv University, Tel-Aviv, Israel. Advisor: Dr. Dan Chazan, IBM Research Labs, Haifa.
- 1991 - 1994 B.Sc. in Electrical Engineering, Cum laude, Department of Electrical Engineering – Systems, Tel-Aviv University, Tel-Aviv, Israel.

Academic Appointments

- 2022 - Associate Professor, Faculty of Electrical and Computer Engineering, Technion
- 2017 - 2022 Associate Professor, Department of Computer Science, Bar-Ilan University
- 2013 - 2017 Senior Lecturer, Department of Computer Science, Bar-Ilan University
- 2009 - 2013 Research Assistant Professor, TTI-C and Department of Computer Science, University of Chicago
- 2008 - 2009 Postdoc Fellow, IDIAP Research Institute at École Polytechnique Fédérale de Lausanne (EPFL).

Professional Experience

- 2022 - Research Professor, aiOla, Herzliya, Israel
- 2020 - 2022 Amazon Scholar, Amazon Alexa, Amazon Boston, MA
- 2020 - 2021 Founding Venture Partner, Disruptive AI Venture Capital, Herzliya, Israel
- 1995 - 2002 Head of speech processing research section, The R&D Center, Elite unit (8200), Israel Defense Forces (IDF)
- 1996 - 1998 Senior signal processing engineer, CTI² Ltd. (acquired by AudioCodes), Israel.
- 1994 - 1995 Signal processing engineer, Efrat Future Technologic (became Verint Inc.) , Israel.

Research Interests

My work on speech and language concentrates on speech processing, automatic speech recognition, speaker recognition, automating laboratory phonology, and pathological speech. My research on machine learning focuses on core machine learning and deep learning algorithms, specifically, that capture the structure of complex tasks, such as automatic speech recognition. But also – how to make them reliable and trustworthy.

Teaching Experience

Advanced Topics in Deep Learning: Speech Signals, graduate, Electrical and Computer Engineering, Technion (2022)

Introduction to Machine learning, undergraduate and graduate, Dept. of Computer Science, Bar-Ilan University (2014, 2015, 2016, 2017, 2019, 2020, 2021)

Advance techniques in machine learning, graduate, Dept. of Computer Science, Bar-Ilan University (2013, 2014, 2017, 2020, 2021)

Speech processing and recognition, graduate, Dept. of Computer Science, Bar-Ilan University (2017, 2018, 2019, 2021)

Probability for Computer Science, undergraduate, Dept. of Computer Science, Bar-Ilan University (2014, 2015, 2016, 2017, 2018)

Public Professional Activities

Elected member of IEEE Speech and Language Processing Technical Committee (2023-2025)

Associate Editor, IEEE Signal Processing Letters

Associate Editor, IEEE/ACM Transactions on Audio, Speech, and Language Processing

Journal reviewer: Speech Communication, IEEE Trans. on Speech and Audio Processing, IEEE Trans. on Neural Network and Learning Systems, IEEE Journal of Selected Topics in Signal Processing, EURASIP Journal on Audio, Speech, and Music Processing, Journal of Machine Learning Research (JMLR), Pattern Recognition, Pattern Recognition Letters

Conference Refereeing and Program Committee: Senior Area Chair in International Joint Conference on Artificial Intelligence (IJCAI), Neural Information Processing Systems (NIPS), International Conference on Machine Learning (ICML), IEEE International Conference on Acoustic, Speech and Signal Processing (ICASSP), Interspeech, North American Chapter of the Association for Computational Linguistics - Human Language Technologies (NAACL HLT)

Other Academic Activities

Tutorial on Generating adversarial examples for speech and speaker recognition and other systems, Interspeech 2019 (with Bhiksha Raj).

Organized with Benny Pinkas a second workshop “Hacking Deep Learning²,” Deep Learning and Security, Attacking deep networks by adversarial examples, differential privacy, and forensics, Bar-Ilan University, January 22, 2019.

Organized with Benny Pinkas a workshop “Hacking Deep Learning,” Deep Learning and Security, Attacking deep networks by adversarial examples, differential privacy, and forensics, Bar-Ilan University, January 29, 2018.

Chair the third symposium on Machine Learning for Speech and Language Processing, San Francisco, CA, September 13, 2016.

Chair the second symposium on Machine Learning for Speech and Language Processing, Portland, OG, September 14, 2011.

Chair the first symposium on Machine Learning for Speech and Language Processing, Bellevue, WA, June 27, 2011.

Founder and chair of the Machine Learning for Speech and Language Processing Special Interest Group (SIGML) of International Speech Communication Association (ISCA), 2011.

Organizer of Illinois Speech Day 2012.

Organizer of Illinois Speech Day 2011.

IEEE Machine Learning for Signal Processing technical committee since 2011.

Organizer of the Learning Club at the Hebrew University, 2006-2007.

Student advisory committee of the International Speech Communication Association (ISCA), 2006-2007.

Membership in Professional Societies

IEEE, member since 2002, senior member since 2017

ISCA (International Speech Communication Association), member since 2002

ACM

Fellowships, Awards and Honors

2017 IEEE Senior Memeber.

2010 Founder and chair of the Machine learning special interest group (SIG) of Inetrenational Speech Commication Soceiety (ISCA).

2007 PASCAL Network of Excellence, Ph.D. Label Award.

2004-2006 Leibniz Student Fellowship.

2002 IBM Fellowship.

2001 Israel Defense Forces (IDF) – National award for outstanding research and development achievements.

Grants

2022-2025	NSF-BSF-NCS-FO: Enhancing speech and deep learning research through holistic acoustic analysis, with Matt Goldrick, PI
2022-2023	Modern Hebrew: Transcribed Speech Corpus (with Yossi Adi, The Hebrew University), Kamin, Israel Innovation Authority (660,000 ILS)
2021-2022	Explainability of Speech Recognition and Speaker Verification Systems, Magnet TrustAI, Israel Innovation Authority (610,000 ILS)
2020	Wireless Networks 5G, Magnet WIN, Israel Innovation Authority (301,000 ILS)
2020	AI-based Speech Therapy (with Dr. Yaki Cohen, Rambam Medical Center), Kamin, Israel Innovation Authority (660,000 ILS)
2020-2022	Generating artificial examples to improve the training of supervised networks using GANs and VAEs, Magnet AVATAR, Israel Innovation Authority (777,000 ILS)
2019-2020	Using Speech Acoustics to Reveal Motor Disruptions, <i>subcontractor</i> , with M. Goldrick, PI, and V. Mittal, PI, National Institutes of Health (NIH), Research Grant R21 (54,000 USD)
2019	Bank Leumi, Research Grant (22,500 ILS)
2018	Audio biomarkers extraction from call center voice, Google Research Grant (20,000 USD)
2018	The Speech, Language and Deep Learning Lab, Canada Foundation, Research Grant (100,000 CAD)
2018-2019	Cyber-Security Center, The Prime Minister's Office, Research Grant
2017-2019	Adversarial examples: generation and defenses, NEC Japan research grant (1,000,000 ILS)
2016	Machine learning and deep learning computation on network modules, Mellanox Research Grant (77,500 ILS)
2015-2017	Anomaly detection, Magnet Infomedia, Israel Innovation Authority (160,000 ILS)
2015	Non-invasive ultrasonic assessment of left ventricular filling pressure (with GE Medical systems), MAGNETON GE, Chief Scientist, The Israeli Minister of Industry (721,000 ILS)
2013-2014	Phonetic echoes of cognitive disruptions in speech production (with M. Goldrick), National Institutes of Health (NIH), Research Grant R21 (330,000 USD)

Graduate Students

Completed PhD theses

Names	Years	Thesis	Current employment
Yossi Adi	2015-2019	On the Robustness of Deep Neural Models and Their Applications to Speech Science	Assistant Professor, The School of Computer Science & Engineering, The Hebrew University; Senior Research Scientist, Meta AI Research (formerly Facebook AI Research)
Tzeviya Fuchs	2015-2022	Identifying Unseen Words	-
Gaby Shalev	2018-2022	Improving the Robustness of Deep Learning Algorithms	Research Scientist, Amazon
Felix Kreuk	2018-2022	Applications of Deep Neural Models to Speech Processing	Research Scientist, Meta AI Research (formerly Facebook AI Research)

Completed MSc theses

Names	Years	Thesis	Current employment
Danny Karmon	2014-2015	Risk Minimization in Structured Prediction using Orbit Loss	Senior Applied Research Manager, Microsoft
Yossi Adi	2014-2015	Automatic Analysis of Speech and Language Data using Deep Structured Learning	Cont. to PhD under my supervision
Stav Buchsbaum*	2014-2016	Multiclass Support Vector Machine with a Reject Option	Algorithm Developer, IoTerra
Einat Naaman	2015-2017	Learning Similarity Functions for Pronunciation Variations	Applied Researcher, General Motors
Amir Gottlieb	2015-2017	Automatic Analysis of Doppler Echocardiography using Structured Prediction	Senior Data Scientist, Taboola
Shua Dissen	2014-2017	Formant Estimation and Tracking using Deep Networks	Speech Recognition Researcher, Gong.io; Cont. to PhD under my supervision
Tzeviya Fuchs	2015-2017	Spoken Term Detection Automatically Adjusted for a Given Threshold	Cont. to PhD under my supervision
Felix Kreuk	2016-2018	Adversarial Examples in Speech Processing	Cont. to PhD under my supervision
Gabi Shalev	2015-2018	Out-of-Distribution Detection using Multiple Semantic Label Representations	Cont. to PhD under my supervision
Yaniv Sheena	2016-2018	Speech Segmentation using Deep Structured Models	Machine Learning Engineer, Facebook
Yosi Shrem	2016-2019	Constraint-Based Recurrent Neural Network and Adversarial Training for Sequence Segmentation	Cont. to PhD under my supervision
Yael Segal	2017-2019	Deep Learning Algorithms for Prediction and Localization of Speech Objects	Cont. to PhD under my supervision
Roni Chernyak	2019-2020	Improving Adversarial Robustness in Images and Audio	Cont. to PhD under my supervision
Talia Ben-Simon	2019-2020	Learning Algorithms for Correcting Children's Speech Production	Cont. to PhD under my supervision
Gal Lev Shalev	2020-2021	Redesigning the Classification Layer by Randomizing the Class Representation Vectors	Research Scientist, General Motors

* co-supervised with Zeev Zalevsky, Engineering, Bar-Ilan University.

PhD theses in progress

Names	Years	Thesis
Yael Segal	2019-2023	Deep Learning Algorithms for Prediction and Localization Speech Objects
Yosi Shrem	2019-2023	Learning Algorithms for Foreign Accent Conversion
Roni Chernyak	2020-2024	Improving Adversarial Robustness in Images and Audio
Shua Dissen	2020-2024	New Methods in Un-supervised Speech and Speaker Recognition
Eyal Cohen	2022-	New Methods for s=Speech Recognition

MSc theses in progress

Names	Years	Thesis
Yona Coscas	2019-	Photorealistic Image and Video Generation from Semantics
Roi Benita	2022-	Diffusion Models for Speech

Selected Publications

Edited Books

Joseph Keshet and Samy Bengio, Eds., *Automatic Speech and Speaker Recognition: Large Margin and Kernel Methods*, John Wiley & Sons, March 2009.

Book Chapters

Joseph Keshet, Subhransu Maji, Tamir Hazan, and Tommi Jaakkola, Perturbation Models and PAC-Bayesian Generalization Bounds, in *Perturbations, Optimization, and Statistics*, Tamir Hazan, George Papandreou, and Daniel Tarlow, Eds., The MIT Press, 2016

Joseph Keshet, Optimizing the Measure of Performance in Structured Prediction, in *Advanced Structured Prediction*, Sebastian Nowozin, Peter V. Gehler, Jeremy Jancsary, and Christoph H. Lampert, Eds., The MIT Press, 2014.

Joseph Keshet, Shai Shalev-Shwartz, Yoram Singer and Dan Chazan, A Large Margin Algorithm for Forced Alignment, in *Automatic Speech and Speaker Recognition: Large Margin and Kernel Methods*, Joseph Keshet and Samy Bengio, Eds., John Wiley & Sons, March 2009.

Joseph Keshet and Dan Chazan, A Kernel Wrapper for Phoneme Sequence Recognition, in *Automatic Speech and Speaker Recognition: Large Margin and Kernel Methods*, Joseph Keshet and Samy Bengio, Eds., John Wiley & Sons, March 2009.

Joseph Keshet, A Proposal for a Kernel-based Algorithm for Large Vocabulary Continuous Speech Recognition, in *Automatic Speech and Speaker Recognition: Large Margin and Kernel Methods*, Joseph Keshet and Samy Bengio, Eds., John Wiley & Sons, March 2009.

David Grangier, **Joseph Keshet** and Samy Bengio, Discriminative Keyword Spotting, in *Automatic Speech and Speaker Recognition: Large Margin and Kernel Methods*, Joseph Keshet and Samy Bengio, Eds., John Wiley & Sons, March 2009.

Journal Papers

Eyal Cohen, Felix Kreuk, **Joseph Keshet**, Speech Time-Scale Modification with GANs, *IEEE Signal Processing Letters*, Vol. 29, pp. 1067-1071, April 2022.

Yael Segal, May Arama-Chayoth, **Joseph Keshet**, Pitch Estimation by Multiple Octave Decoders, *IEEE Signal Processing Letters*, Vol. 28, pp. 1610-1614, July 2021.

Adar Paz, Eshkol Rafaeli, Eran Bar-Kalifa, Eva Gilboa-Schechtman, Sharon Gannot, Bracha Laufer-Goldshtein, Shrikanth Narayanan, **Joseph Keshet**, Dana Atzil-Slonim, Intrapersonal and Interpersonal Vocal Affect Dynamics During Psychotherapy, *Journal of Consulting and Clinical Psychology*, Vol. 89, Issue 3, pp. 227, ASA, March 2021.

Matthew Goldrick, Yosi Shrem, Oriana Kilbourn-Ceron, Cristina Baus, and **Joseph Keshet**, Using automated acoustic analysis to explore the link between planning and articulation in second-language speech production, *Language, Cognition and Neuroscience*, pp. 1–16, 2020.

Ariel Rosenfeld, Moshe Cohen, Sarit Kraus, and **Joseph Keshet**, Online Prediction of Time Series with Assumed Behavior, *Engineering Applications of Artificial Intelligence*, Volume 88, February 2020, 103358.

Yehoshua Dissen, Jacob Goldberger, and **Joseph Keshet**, Formant Estimation and Tracking: A Deep Learning Approach, *Journal of the Acoustical Society of America*, 145 (2), February 2019.

Jacob T. Cohen, Alma Cohen, Limor Benyamini, Yossi Adi, **Joseph Keshet**, Predicting glottal closure insufficiency using fundamental frequency contour analysis, *Head & Neck, Journal of the Sciences and Specialities of the Head and Neck*, Vol. 41, Issue 7, pp. 2324-2331, 2019.

Esteban Buz, Adam Buchwald, and **Joseph Keshet**, Assessing Automatic VOT Annotation using Unimpaired and Impaired Speech, *International Journal of Speech-Language Pathology*, Vol. 20, No. 6, pp. 624-634, 2018.

Joseph Keshet, Automatic Speech Recognition: A Primer for Speech Pathology Researchers, *International Journal of Speech-Language Pathology*, Vol. 20 No. 6, pp. 599-609, 2018.

Matthew Goldrick, Rhonda McClain, Emily Cibelli, Yossi Adi, Erin Gustafson, Cornelia Moers, and **Joseph Keshet**, The influence of lexical selection disruptions on articulation, *Journal of Experimental Psychology: Learning, Memory, and Cognition*, July 2018.

Tzeviya Fuchs and **Joseph Keshet**, Spoken Term Detection Automatically Adjusted for a Given Threshold, *IEEE Journal of Selected Topics in Signal Processing*, Dec 2017, Volume 11, Issue 8, pp. 1-8.

Yossi Adi, **Joseph Keshet**, Emily Cibelli, Erin Gustafson, Cynthia Clopper, and Matthew Goldrick, Automatic Measurement of Vowel Duration via Structured Prediction, *Journal of the Acoustical Society of America*, Volume 140, Issue 6, 2016.

Nisan Ozana, Stav Buchsbaum, Yael Bishitz, Yevgeny Beiderman, Zeev Schmilovitch, Ariel Schwarz, Amir Shemer, **Joseph Keshet**, and Zeev Zalevsky, An optical remote sensor for peanut kernel abortion classification, *Applied Optics*, Vol. 55, Issue 15, pp. 4005-4010, 2016.

Yossi Adi and **Joseph Keshet**, StructED : Risk Minimization in Structured Prediction, *Journal of Machine Learning Research* 17, 1-5, 2016.

Matthew Goldrick*, **Joseph Keshet***, Erin Gustafson, Jordana Heller, and Jeremy Needle, Automatic Analysis of Slips of the Tongue: Insights into the Cognitive Architecture of Speech Production, *Cognition*, 149, 31-39, 2016.

Morgan Sonderegger and **Joseph Keshet**, Automatic Discriminative Measurement of Voice Onset Time, *Journal of the Acoustical Society of America*, Vol. 132, Issue 6, pp. 3965–3979, 2012.

Francesco Orabona, **Joseph Keshet** and Barbara Caputo, Bounded Kernel-Based Online Learning, *Journal of Machine Learning Research*, 10(Nov): 2643–2666, 2009.

Joseph Keshet, David Grangier and Samy Bengio, Discriminative Keyword Spotting, *Speech Communication*, Volume 51, Issue 4, pp. 317-329, April 2009.

Joseph Keshet, Shai Shalev-Shwartz, Yoram Singer and Dan Chazan, Large Margin Algorithm for

Speech-to-Phoneme and Music-to-Score Alignment, *IEEE Trans. on Audio, Speech and Language Processing*, 15(8), pp. 2373–2382, Nov. 2007.

Koby Crammer, Ofer Dekel, **Joseph Keshet**, Shai Shalev-Shwartz and Yoram Singer, Online Passive-Aggressive Algorithms, *Journal of Machine Learning Research*, 7(Mar): 551–585, 2006.

Refereed Conference papers

Gabi Shalev, Gal-Lev Shalev, **Joseph Keshet**, A Baseline for Detecting Out-of-Distribution Examples in Image Captioning, ACM Multimedia 2022, Lisbon, Portugal.

Bronya Roni Chernyak, Talia Ben Simon, Yael Segal, Jeremy Steffman, Eleanor Chodroff, Jennifer Cole, **Joseph Keshet**, DeepFry: Identifying Vocal Fry Using Deep Neural Networks, The 23rd Annual Conference of the International Speech Communication Association (Interspeech), Incheon, Korea, 2022.

Yael Segal, Kasia Hitczenko, Matthew Goldrick, Adam Buchwald, Angela Roberts, **Joseph Keshet**, DD-Ktor: Automatic Diadochokinetic Speech Analysis, The 23rd Annual Conference of the International Speech Communication Association (Interspeech), Incheon, Korea, 2022.

Yosi Shrem, Felix Kreuk, **Joseph Keshet**, Formant Estimation and Tracking using Probabilistic Heat-Maps, The 23rd Annual Conference of the International Speech Communication Association (Interspeech), Incheon, Korea, 2022.

Yehoshua Dissen, Felix Kreuk, **Joseph Keshet**, Self-supervised Speaker Diarization, The 23rd Annual Conference of the International Speech Communication Association (Interspeech), Incheon, Korea, 2022.

Talia ben Simon, Felix Kreuk, Faten Awwad, Jacob T. Cohen, **Joseph Keshet**, Correcting Misproduced Speech using Spectrogram Inpainting, The 23rd Annual Conference of the International Speech Communication Association (Interspeech), Incheon, Korea, 2022.

Tzeviya Sylvia Fuchs, Yedid Hoshen, **Joseph Keshet**, Unsupervised Word Segmentation using K Nearest Neighbors, The 23rd Annual Conference of the International Speech Communication Association (Interspeech), Incheon, Korea, 2022.

Bronya Roni Chernyak, Bhiksha Raj, Tamir Hazan, **Joseph Keshet**, Constant Random Perturbations Provide Adversarial Robustness with Minimal Effect on Accuracy, RobustML Workshop, Ninth International Conference on Learning Representations (ICLR), 2021.

Shahar Segal, Yossi Adi, Benny Pinkas, Carsten Baum, Chaya Ganesh, and **Joseph Keshet**, Fairness in the Eyes of the Data: Certifying Machine-Learning Models, AAAI/ACM conference on AI, Ethics, and Society (AIES), 2021.

Tzeviya Sylvia Fuchs, Yael Segal, and **Joseph Keshet**, CNN-based Spoken Term Detection and Localization without Dynamic Programming, the 46rd IEEE International Conference in Acoustic, Speech and Signal Processing (ICASSP), 2021.

Felix Kreuk, **Joseph Keshet** and Yossi Adi, Self-Supervised Contrastive Learning for Unsupervised Phoneme Segmentation, The 21th Annual Conference of the International Speech Communication Association (Interspeech), Shanghai, China, 2020.

Felix Kreuk, Yossi Adi, Bhiksha Raj, Rita Singh and **Joseph Keshet**, Hide and Speak: Towards Deep Neural Networks for Speech Steganography, The 21th Annual Conference of the International Speech

Communication Association (Interspeech), Shanghai, China, 2020.

Ben Goldberger, Guy Katz, Yossi Adi and **Joseph Keshet**, Minimal Modifications of Deep Neural Networks using Verification, 23rd International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR23), 2020.

Felix Kreuk, Yaniv Sheena, **Joseph Keshet**, Yossi Adi, Phoneme Boundary Detection using Learnable Segmental Features, The 45th International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Barcelona, 2020.

Yosi Shrem, Matthew Goldrick, and **Joseph Keshet**, Dr.VOT : Measuring Positive and Negative Voice Onset Time in the Wild , The 20th Annual Conference of the International Speech Communication Association (Interspeech), Graz, 2019.

Yael Segal, Tzeviya Sylvia Fuchs, **Joseph Keshet**, SpeechYOLO: Detection and Localization of Speech Objects, The 20th Annual Conference of the International Speech Communication Association (Interspeech), Graz, 2019.

Gabi Shalev, Yossi Adi, and **Joseph Keshet**, Out-of-Distribution Detection using Multiple Semantic Label Representations, Neural Information and Processing Systems (NeurIPS), 2018.

Yossi Adi, Carsten Baum, Moustapha Cisse, Benny Pinkas, **Joseph Keshet**, Turning Your Weakness Into a Strength: Watermarking Deep Neural Networks by Backdooring, Proc. of the 27th Usenix Security Symposium, Baltimore, MD, USA, 2018.

Felix Kreuk, Yossi Adi, Moustapha Cisse, **Joseph Keshet**, Fooling End-to-end Speaker Verification by Adversarial Examples, the 43rd IEEE International Conference in Acoustic, Speech and Signal Processing (ICASSP), Calgari, Canada, 2018.

Moustapha Cisse, Yossi Adi, Natalia Neverova, **Joseph Keshet**, Houdini: Fooling Deep Structured Prediction Models, Proc. of the 31st the Annual Conference on Neural Information Processing Systems (NIPS), 2017.

Yaniv Sheena, Míša Hejrná, Yossi Adi, **Joseph Keshet**, Automatic Measurement of Pre-aspiration, The 18th Annual Conference of the International Speech Communication Association (Interspeech), Stockholm, 2017.

Einat Naaman, Yossi Adi, **Joseph Keshet**, Learning Similarity Functions for Pronunciation Variations, The 18th Annual Conference of the International Speech Communication Association (Interspeech), Stockholm, 2017.

Yossi Adi, **Joseph Keshet**, Emily Cibelli, Matthew Goldrick, Sequence Segmentation Using Joint RNN and Structured Prediction Models, the 42st IEEE International Conference in Acoustic, Speech and Signal Processing (ICASSP), New Orleans, 2017.

Yehoshua Dissen and Joseph Keshet, Formant Estimation and Tracking using Deep Learning, Proc. of the 17th Annual Conference of the International Speech Communication Association (Interspeech), San Francisco, CA, 2016.

Yossi Adi, **Joseph Keshet**, Olga Dmitrieva, and Matt Goldrick, Automatic Measurement of Voice Onset Time and Prevoicing using Recurrent Neural Networks, Proc. of the 17th Annual Conference of the International Speech Communication Association (Interspeech), San Francisco, CA, 2016.

Ariel Rosenfeld, **Joseph Keshet**, Claudia V. Goldman, Sarit Kraus, Online Prediction of Exponential

Decay Time Series with Human-Agent Application, Proc. of the 22st European Conference on Artificial Intelligence (ECAI), The Hague, Holland, 2016.

Rita Singh, **Joseph Keshet**, Eduard Hovy, Profiling hoax callers, the IEEE Symposium on Technologies for Homeland Security (HST), 1-6, 2016.

Rita Singh, **Joseph Keshet**, Deniz Gencaga, Bhiksha Raj, The Relationship of Voice Onset Time and Voice Offset Time to Physical Age, the 41st IEEE International Conference in Acoustic, Speech and Signal Processing (ICASSP), Shanghai, China, 2016.

Yossi Adi, **Joseph Keshet**, and Matt Goldrick, Vowel Duration Measurement using Deep Neural Networks, IEEE International Workshop on Machine Learning for Signal Processing (MLSP), Boston, USA, 2015

Adiel Ben-Shalom, **Joseph Keshet**, Roni Yeger-Granot, Automatic analysis of music: Performance of cantillation signs in Yemenite Jewish traditional cantillation, 9th Conference on Interdisciplinary Musicology (CIM14), Berlin, 2014.

Adiel Ben-Shalom, **Joseph Keshet**, Doron Modan, and Asher Laufer, Automatic Tools for Analyzing Spoken Hebrew, Afeka Conference for Speech Processing, Tel-Aviv, Israel, 2014.

Tamir Hazan, Subhransu Maji, **Joseph Keshet**, Tommi Jaakkola, On Sampling from the Gibbs distribution with Random Maximum A-Posteriori Perturbations, Proc. of the 27th the Annual Conference on Neural Information Processing Systems (NIPS), 2013.

Noam Peled, Moshe Bitan, **Joseph Keshet**, Sarit Kraus, How to predict human strategic decisions using facial expressions, International Joint Conference on Artificial Intelligence (IJCAI), 2013.

Rohit Prabhavalkar, Karen Livescu, Eric Fosler-Lussier, and **Joseph Keshet**, Discriminative Articulatory Models for Spoken Term Detection in Low-Resource Conversational Settings, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2013.

Rohit Prabhavalkar, **Joseph Keshet**, Karen Livescu, and Eric Fosler-Lussier, Discriminative Spoken Term Detection with Limited Data, The 2nd Symposium on Machine Learning in Speech and Language Processing, Portland, Oregon, 2012.

Katharine Henry, Morgan Sonderegger and **Joseph Keshet**, Automatic Measurement of Positive and Negative Voice Onset Time, The 13th Annual Conference of the International Speech Communication Association (Interspeech), Portland, Oregon, 2012 (**full oral presentation, best paper track**).

Hao Tang, **Joseph Keshet**, and Karen Livescu, Discriminative pronunciation modeling: A large-margin, feature-rich approach, Proc. of the 50th Annual Meeting of the Association of Computational Linguistics (ACL), 2012 (**full oral presentation, best paper track**).

David McAllester and **Joseph Keshet**, Generalization Bounds and Consistency for Latent Structural Probit and Ramp Loss, Proc. of the 25th the Annual Conference on Neural Information Processing Systems (NIPS), 2011 (**full oral presentation**).

Joseph Keshet, Chih-Chieh Cheng, Mark Stoehr, and David McAllester, Direct Error Rate Minimization of Hidden Markov Models, Proc. of the 12th Annual Conference of the International Speech Communication Association (Interspeech), Florence, Italy, 2011.

Andrew Cotter, Nathan Srebro, and **Joseph Keshet**, A GPU-Tailored Approach for Training Kernelized SVMs, Proc. of the 17th ACM Conference on Knowledge Discovery and Data Mining (KDD), San

Diego, CA, 2011.

Joseph Keshet, David McAllester, and Tamir Hazan, PAC-Bayesian Approach for Minimization of Phoneme Error Rate, Proc. of IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Prague, Czech Republic, 2011.

David McAllester, Tamir Hazan and **Joseph Keshet**, Direct Loss Minimization for Structured Prediction, Proc. of the 24th Annual Conference on Neural Information Processing Systems (NIPS), 2010.

Morgan Sonderegger and **Joseph Keshet**, Automatic Discriminative Measurement of Voice Onset Time, Proc. of the 12th Annual Conference of the International Speech Communication Association (INTERSPEECH), Chiba, Japan, 2010.

Martin Wöllmer, Florian Eyben, **Joseph Keshet**, Alex Graves, Björn Schuller, and Gerhard Rigoll, Robust Discriminative Keyword Spotting for Emotionally Colored Spontaneous Speech using Bidirectional LSTM Networks, Proc. of IEEE International Conference on Acoustic, Speech, and Signal Processing (ICASSP), Taipei, Taiwan, 2009.

Yves Grandvalet, **Joseph Keshet**, Alain Rakotomamonjy, and Stephane Canu, Support Vector Machines with a Reject Option Proc. of the 22nd Annual Conference on Neural Information Processing Systems (NIPS), 2008.

Francesco Orabona, **Joseph Keshet** and Barbara Caputo, The Projectron: a Bounded Kernel-Based Perceptron Proc. of the 25th International Conference on Machine Learning (ICML), 2008.

Joseph Keshet, David Grangier and Samy Bengio, Discriminative Keyword Spotting, Proc. of the 3rd Non-Linear Speech Processing Workshop (NOLISP), Paris, 2007.

Joseph Keshet, Shai Shalev-Shwartz, Samy Begio, Yoram Singer and Dan Chazan, Discriminative Kernel-Based Phoneme Sequence Recognition, Proc. of the 9th International Conference on Spoken Language Processing (Interspeech), Pittsburgh, PA, 2006.

Joseph Keshet, Shai Shalev-Shwartz, Yoram Singer and Dan Chazan, Phoneme Alignment Based on Discriminative Learning, Proc. of the 9th European Conference on Speech Communication and Technology (Interspeech), Lisbon, 2005.

Shai Shalev-Shwartz, **Joseph Keshet** and Yoram Singer, Learning to Align Polyphonic Music, Proc. of the 5th International Conference on Music Information Retrieval (ISMIR), Barcelona, Spain, 2004.

Ofer Dekel, **Joseph Keshet** and Yoram Singer, An Online Algorithm for Hierarchical Phoneme Classification, Workshop on Multimodal Interaction and Related Machine Learning Algorithms (MLMI), Martigny, Switzerland, 2004, LNCS, Vol. 3361/2005, p. 146, Springer-Verlag.

Ofer Dekel, **Joseph Keshet** and Yoram Singer, Large Margin Hierarchical Classification, Proc. of the 21st International Conference on Machine Learning (ICML), Banff, Canada, 2004.

Koby Crammer, **Joseph Keshet** and Yoram Singer, Kernel Design using Boosting, in Proc. of 16th Annual Conference on Neural Information Processing Systems (NIPS), 2002.

Joseph Keshet, Dan Chazan and Ben-Zion Bobrovsky, Plosive Spotting with Large Margin Classifiers, in Proc. of 7th European Conference on Speech Communication and Technology (Eurospeech), 2001.