

Matthew Wiesner

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RESEARCH INTERESTS

Speech processing with emphasis on multi-lingual and cross-lingual modeling for automatic speech recognition, speech translation, and topic identification from speech, especially for low-resource languages.

EDUCATION

Johns Hopkins University Ph.D. Electrical Engineering	Oct 2021
Johns Hopkins University Masters Engineering, Electrical	May 2016
McGill University B.Eng Electrical Engineering / Minor in Arabic Language	Dec 2013

EXPERIENCE

Research Scientist at Johns Hopkins University HLTCOE	March 2021 - Present
Graduate Student Research Assistant at Johns Hopkins	Sep 2014 - Oct 2021
Facebook AI Research	Spring 2019
Teaching Assistant – Machine Learning for Signal Processing (Johns Hopkins)	Fall 2016
Grader – Representation Learning	Fall 2015

COMMUNITY SERVICE

Guest Lecturer (Graduate-level course, Machine Learning for Signal Processing): Linear Algebra Review, Methods for Supervised Representation Learning	2017-2022
Guest Lecturer (Introduction to Human-Language Technology) Automatic Speech Recognition Tutorial	2019-2022
Guest Lecturer JSALT Summer School Automatic Speech Recognition Lab	2022
CLSP Seminar Series Recording Committee	2014-2022
IWSLT Low-Resource Multilingual Speech Translation Track Co-Organizer	2021
IWLST Dialectal Speech Translation Track Co-Organizer	2022
CHiME-7 Task 1 (Distant Automatic Speech Recognition) Co-Organizer	2022
Reviewer IEEE, ICASSP, Interspeech, SLT	2021-present

COURSES TAUGHT & INVITED TALKS

JHU Course 520.666 – Information Extraction from Speech	Spring 2023
JSALT Code-switching ASR	Aug 2022
HLTCOE Tech-exchange – ASR for Digraphic Languages	Fall 2021
HLTCOE Tech-exchange – A new Multilingual Speech Translation Corpus	Spring 2021

PUBLICATIONS

Jinyi Yang, Amir Hussein, **Matthew Wiesner**, and Sanjeev Khudanpur, JHU IWSLT 2022 Dialect Speech Translation System Description, IWSLT 2022

Matthew Wiesner, Desh Raj, and Sanjeev Khudanpur, *Injecting text and cross-lingual supervision in few-shot learning from self-supervised models*, ICASSP 2022

Matthew Wiesner, Mousmita Sarma, Ashish Arora, Desh Raj, Dongji Gao, Ruizhe Huang, Supreet Preet, Moris Johnson, Zikra Iqbal, Nagendra Goel, Jan Trmal, Paola Garca, Sanjeev Khudanpur, *Training Hybrid Models on Noisy Transliterated Transcripts for Code-Switched Speech Recognition*, INTERSPEECH 2021.

Elizabeth Salesky, **Matthew Wiesner**, Jacob Bremerman, Roldano Cattoni, Matteo Negri, Marco Turchi, Douglas W. Oard, and Post Matt. *The multilingual TEDx corpus for speech recognition and translation*, INTERSPEECH 2021

Elizabeth Salesky, Eleanor Chodroff, Tiago Pimentel, **Matthew Wiesner**, Ryan Cotterell, Alan W Black, Jason Eisner, *A Corpus for Large-Scale Phonetic Typology*, ACL 2020.

Matthew Wiesner, Oliver Adams, David Yarowsky, Jan Trmal, Sanjeev Khudanpur, *Zero-shot pronunciation lexicons for cross-language acoustic model transfer*, ASRU 2019

Matthew Wiesner, Adithya Renduchintala, Shinji Watanabe, Chunxi Liu, Najim Dehak, Sanjeev Khudanpur, *Pretraining by Backtranslation for End-to-end ASR in Low-Resource Settings*, INTERSPEECH 2019

Martin Karafit, Murali Karthick Baskar, Shinji Watanabe, Takaaki Hori, **Matthew Wiesner**, Jan “Honza” Černocký, *Analysis of Multilingual Sequence-to-Sequence speech recognition systems*, INTERSPEECH 2019

Oliver Adams, **Matthew Wiesner**, Shinji Watanabe, David Yarowsky, *Massively Multilingual Adversarial Speech Recognition*, NAACL 2018

Jaemin Cho, Murali Karthick Baskar, Ruizhi Li, **Matthew Wiesner**, Sri Harish Mallidi, Nelson Yalta, Martin Karafiat, Shinji Watanabe, Takaaki Hori, *Multilingual sequence-to-sequence speech recognition: architecture, transfer learning, and language modeling*, SLT 2018

Chunxi Liu, **Matthew Wiesner**, Shinji Watanabe, Craig Harman, Jan Trmal, Najim Dehak, Sanjeev Khudanpur, *Low-Resource Centextual Topic Identification on Speech*, SLT 2018

Matthew Wiesner, Chunxi Liu, Lucas Ondel, Craig Harman, Vimal Manohar, Jan Trmal, Zhongqiang Huang, Najim Dehak, Sanjeev Khudanpur, *Automatic Speech Recognition and Topic Identification for Almost-Zero-Resource Languages*, INTERSPEECH 2018.

Adithya Renduchintala, Shuoyang Ding, **Matthew Wiesner** and Shinji Watanabe, *Multi-Modal Data Augmentation for End-to-end ASR*, INTERSPEECH 2018 (**Best Student Paper**)

Shinji Watanabe, Takaaki Hori, Shigeki Karita, Tomoki Hayashi, Jiro Nishitoba, Yuya Unno, Nelson Enrique Yalta Soplin, Jahn Heymann, **Matthew Wiesner**, Nanxin Chen, Adithya Renduchintala, Tsubasa Ochiai, *ESPnet: End-to-End Speech Processing Toolkit*, INTERSPEECH 2018.

Chunxi Liu, Jan Trmal, **Matthew Wiesner**, Craig Harman, Sanjeev Khudanpur, *Topic Identification for Speech without ASR*, INTERSPEECH 2017 (**Nominated for Best Student Paper**).

Jan Trmal, **Matthew Wiesner**, Vijayaditya Peddinti, Xiaohui Zhang, Pegah Ghahremani, Yiming Wang, Vimal Manohar, Hainan Xi, Daniel Povey, Sanjeev Khudanpur, *The Kaldi OpenKWS System: Improving Low Resource Keyword Search*, INTERSPEECH 2017.