מכון ויצמן למדע

THE WEIZMANN INSTITUTE OF SCIENCE

FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Machine Learning and Statistics Seminar

Room 1 ,Ziskind Building
on Wednesday, Jan 06, 2016
at 11:15

JOINT Vision and Machine Learning seminar

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Segmental Sequence Models in the Neural Age

Abstract:

Many sequence prediction tasks---such as automatic speech recognition and video analysis---benefit from long-range temporal features. One way of utilizing long-range information is through segmental (semi-Markov) models such as segmental conditional random fields. Such models have had some success, but have been constrained by the computational needs of considering all possible segmentations. We have developed new segmental models with rich features based on neural segment embeddings, trained with discriminative large-margin criteria, that are efficient enough for first-pass decoding. In our initial work with these models, we have found that they can outperform frame-based HMM/deep network baselines on two disparate tasks, phonetic recognition and sign language recognition from video. I will present the models and their results on these tasks, as well as (time permitting) related recent work on neural segmental acoustic word embeddings.

This is joint work with Hao Tang, Weiran Wang, Herman Kamper, Taehwan Kim, and Kevin Gimpel