UBIQUITOUS KNOWLEDGE PROCESSING

Bachelor/Master Thesis

TECHNISCHE UNIVERSITÄT DARMSTADT

Multilingual Automatic Speech Recognition for Low-resource Languages

Motivation

Automatic Speech Recognition (ASR) models transcribe speech to text by a probabilistic prediction of the transcription given the speech audio. Despite recent advances in the field with cross-lingual and current unsupervised approaches, ASR systems for low-resource languages remain an open challenge.

Task Description

- Literature review: Exploring and investigating cross-lingual and unsupervised methods for ASR
- Programming: Developing an ASR system adaptable for low-resource languages
- Analysis: Evaluate the new model against existing approach

References

- Wang et al. (2020). FAIRSEQ S2T: Fast Speech-to-Text Modeling with FAIRSEQ. In *Proceedings of AACL 2020,* pp. 33-39.
- Baevski et al. (2020) wav2vec 2.0: A Framework for Self-Supervised Learning of Speech Representations. In *Proceedings of NeurIPS 2020,* pp. 12449–12460.
- Conneau et al. (2020) Unsupervised Cross-lingual Representation Learning for Speech Recognition. *ArXiv preprint arXiv:2006.13979.*
- Baevski et al. (2021). Unsupervised Speech Recognition. *ArXiv preprint arXiv:2105.11084.*

Analysis ■■■■□

Programming ■□□□□

Literature ■■■□□

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