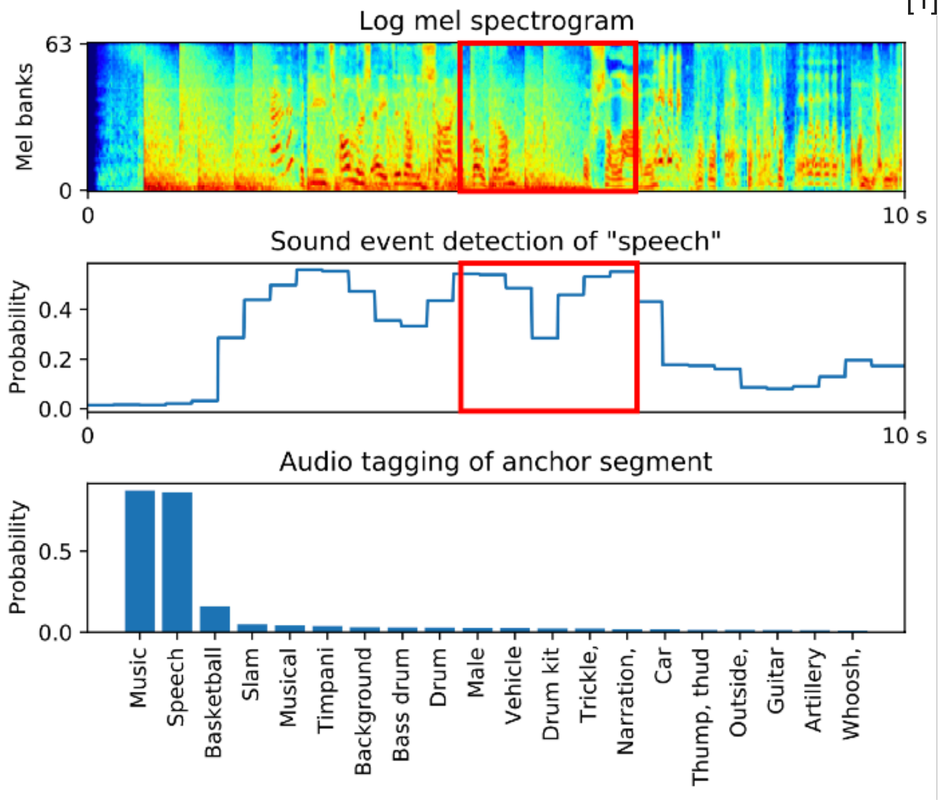
Speech Enhancement

Training phase

- Method: $f(s_1 + s_2 \,|\, c) \mapsto s_1$

1. The selection of s_1 and s_2.
   - s_1, s_2 should have disjoint labels.
2. The generation of condition c.
   - $c = \text{max\_pool}(f_{SED}(s_1))$
   - SED: Sound Event Detections[2]
3. The modeling of $f(\cdot)$:
   - A IRM based Conditional-UNet.

[1]



[1] Kong, Qiuqiang, Haohe Liu, Xingjian Du, Li Chen, Rui Xia, and Yuxuan Wang. "Speech enhancement with weakly labelled data from AudioSet." *arXiv preprint arXiv:2102.09971* (2021).

[2] qiuqiangkong. qiuqiangkong/panns_inference. GitHub. Published August 17, 2020. Accessed November 24, 2021. https://github.com/qiuqiangkong/panns_inference

Speech Enhancement

Inference phase

- Method: $f(m \mid c) \mapsto s$

1. m is the given mixture signal
2. c is the one-hot condition for speech.
3. s is the separation target.