Overview of the Weakly-Supervised Action Segmentation System

- We iteratively train a temporal segmentation network with target generated from action transcript, and refine the action transcript based on the inference of current network.

Iterative Soft Boundary Assignment (ISBA)

- ISBA uses a simple-yet-effective algorithm, trying to generate a reasonable probabilistic distribution of different actions through numbers of iterations.

Temporal Convolutional Feature Pyramid Network (TCFPN)

- TCFPN+ISBA outperforms state-of-the-art on both action segmentation task and alignment tasks.
- Our training strategy for weakly-supervised sequence learning is general and can be extended to other tasks, such as speech recognition, video segmentation, etc.

Experiment

- We propose ISBA as a novel training strategy for weakly-supervised sequence learning, and TCFPN as an advanced temporal convolutional network for supervised action recognition.
- The whole system TCFPN+ISBA outperforms state-of-the-art on both action segmentation task and alignment tasks.
- Our training strategy for weakly-supervised sequence learning is general and can be extended to other tasks, such as speech recognition, video segmentation, etc.