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MIDI-Audio Alignment

1. What is MIDI-audio alignment?

MIDI-Audio alignment is the process of transcribing audio files into MIDI representation.

2. What techniques are typically used for MIDI-audio alignment?

The main two types of techniques are Dynamic Time Warping (DTW) and Hidden Markov Models (HMM). DTW using compatibility matrices and HMM uses graph theory to predict the current state based on previous states of the system.

3. What is the difference between online and offline alignment?

Online alignment is used for live performance and typically is used for score following to enable automated accompaniment from the computer. It requires low-computational cost to avoid latency. 250-300 ms is the timing window considered for judging a note's occurrence. Offline alignment is used in processing fixed media and can judge asynchronies down to the 50ms range.