

A PSOLA based Approach for Voice Morphing

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Abstract – Voice morphing is a name given to procedures which take speech as input from one speaker and attempt to generate speech that sounds like it came from another speaker. One compelling argument for good voice morphing is that it lessens the trouble in creating additional synthetic voices with new characters and styles once an existing voice has been created based on a full-sized corpus. There are further voice transformation applications for security, privacy, and assistive technologies. Although current voice transformation techniques perform well in the sense that humans typically judge transformed speech to sound more like the target speaker than the source speaker, there is still room for improvement. In this paper, we applied PSOLA for voice morphing as PSOLA works by dividing the speech waveform in small overlapping segments. To change the pitch of the signal, the segments are moved further apart (To decrease the pitch) or closer together (to increase the pitch). To change the duration of the signal, the segments are then repeated multiple times (To increase the duration) or some are eliminated (to decrease the duration). The segments are then combined using the overlap add technique. Results show that this work efficiently changes the pitch property of source to target.

Keywords – PSOLA, Voice morphing.