Computer-assisted Transcription of Ethnic Music

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Introduction: Tarsos

This research presents a system to ease the task of transcribing pitch in ethnic music. The system is an extension of the modular software platform **Tarsos**[1,2].

Initially Tarsos was developed for pitch analysis, especially of non-Western music. Tarsos is a user-friendly, interactive tool to explore tone scales and pitch organization in music of the world.

Now, features to assist transcription have been added.

Extensions for Transcription

Figure 1 shows a screenshot of the system. Several features to assist transcription can be seen:

A) Melograph with a detailed pitch contour,

B) Pitch class histogram view, which suggests the tone scale.

C) Time stretching feature [3], which allows to slow down audio without affecting pitch.

D) A way to loop small audio exerpts and navigate from one to another.

E) MIDI keyboard, to play and check transcribed material on an automatically tuned synthesizer.

The underlying DSP features, including [3], are bundeled in an easy to reuse software library, TarsosDSP.

Conclusion

Extensions to Tarsos have been presented, which assists in transcribing ethnic music, even when the pitch organization of the music is unknown beforehand.

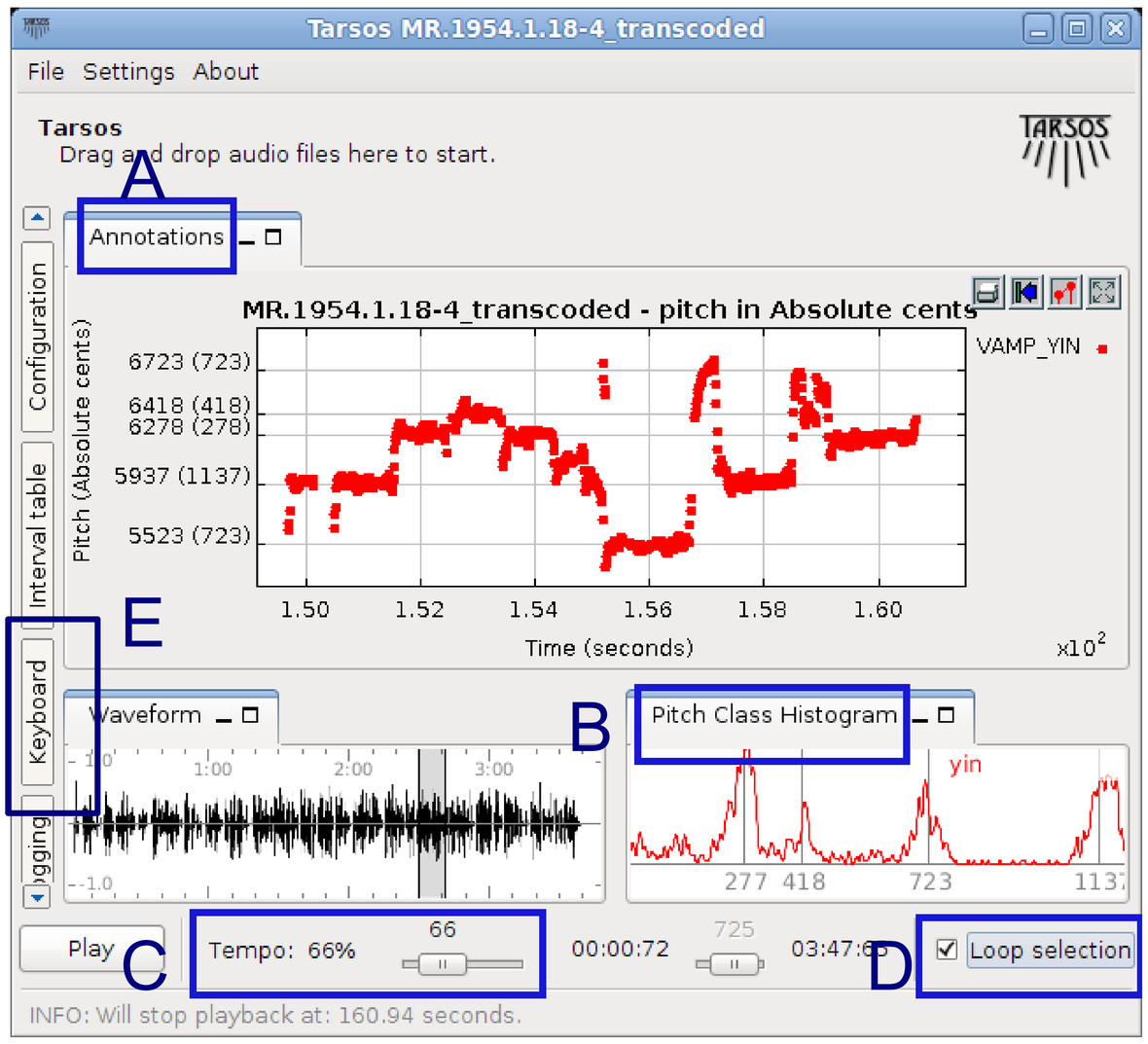

Figure 1: Tarsos transcription features

Downloads

Tarsos is open source software and can be found on the Tarsos website `http://tarsos.0110.be`

TarsosDSP, is an open source Java DSP library, which contains practical audio processing algorithms. `http://github.com/JorenSix/TarsosDSP`

References

[1] Six, J. & Cornelis, O. (2011). *Tarsos - a Platform to Explore Pitch Scales in Non-Western and Western Music*. In Proceedings of ISMIR 2011.

[2] Six, J., Cornelis, O., & Leman, M. (2013). *Tarsos, a Modular Platform for Precise Pitch Analysis of Western and Non-Western Music*. JNMR. Accepted - In press.

[3] Verhelst, W. & Roelands, M. (1993). *An Overlap-Add Technique Based on Waveform Similarity (WSOLA) for High Quality Time-Scale Modification of Speech*. In IEEE International Conference on Acoustics Speech and Signal Processing (ICASSP 1993).