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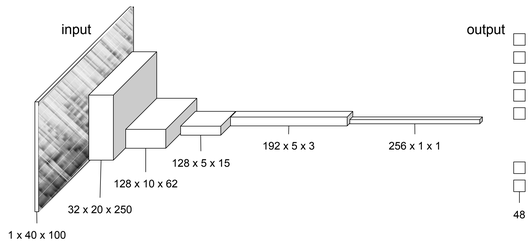
Automatic Tagging in World Music Collections

Aim: Predict keywords that describe the music of recordings from large world music archives.

Motivation: Metadata associated with ethnomusicological research is often inconsistent, incomplete, and inaccurate [2]. Automatic tagging has been successfully applied to popular (Western) music [1]. We apply automatic tagging to improve metadata in world music collections [3].

Method



- 4 x (conv2D, ReLU, max-pooling) + FCNN [1]
- input: mel-spectrogram
- output: tag probability

Dataset

- 4209 tracks training, 1404 tracks testing
- 48 tags - Country, Language, Culture
- each tag occurs min=56, max=796, mean=176
- 69 unique tag vectors

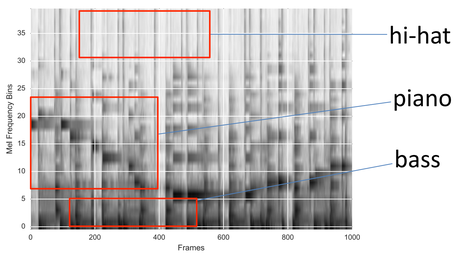
basic NLP doesn't fix these language tags:
- Nyore, Nyore [? Nyole], Nyoro
- Luhya, Luyia, Luyia (Kisa)

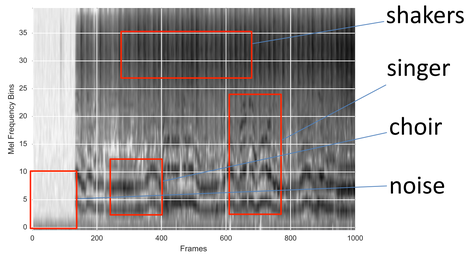
Challenges

Popular vs World music:

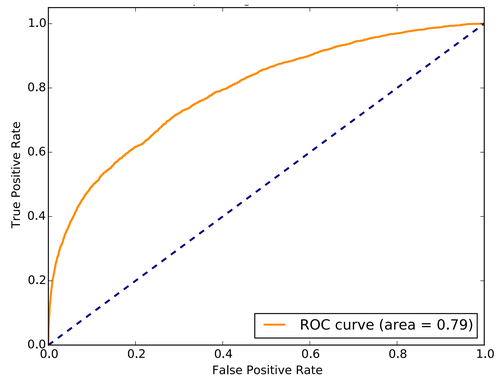
- the tag taxonomy is different

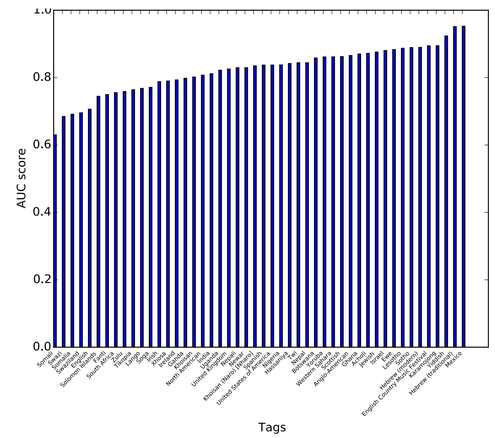
- the audio signal is more noisy





Results





Model & Data	AUC
[1] on world music	0.791
[1] on popular music	0.894

References

[1] Choi, K., Fazekas, G., & Sandler, M. (2016). Automatic tagging using deep convolutional neural networks. In *International Society for Music Information Retrieval Conference* (pp. 805–811).

[2] Serra, X. (2011). A Multicultural Approach in Music Information Research. In *International Society for Music Information Retrieval Conference* (pp. 151–156).

[3] Panteli, M., Benetos, E., & Dixon, S. (2016). Learning a feature space for similarity in world music. In *International Society for Music Information Retrieval Conference* (pp. 538–544)..