Music tagging and recommendation with deep learning

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What Research ?

- Using artificial neural networks to extract feature from music data supervised by social tags annotated by community users and doing recommendation

What Purpose ?

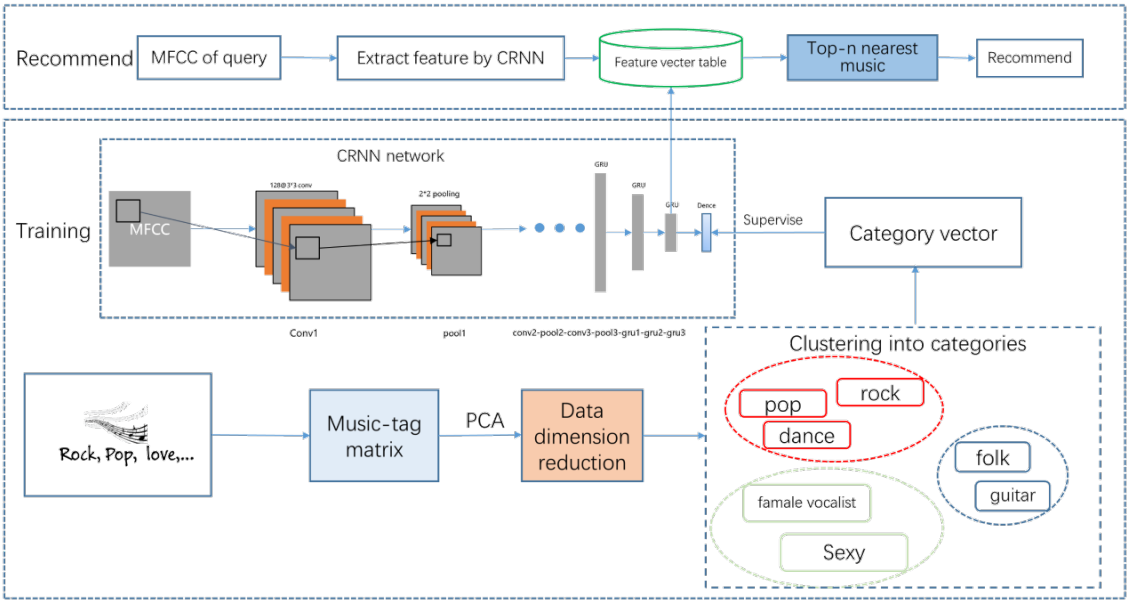
- To do personal recommendation to listener
- Automatic annotation of new songs
- Matrix factorization helps to do semantic clustering and improve tagging performance
- To make the recommendation more flexible and increase diversity

Abstract

Fostered by music technologies and user engagements, recent years have seen an explosive growth of music information and data on social music platforms and services. On the one hand providers such as YouTube and Pandora establish massive music collection with metadata. On the other hand users generate large volume of heterogeneous data such as playlist and tags which are aggregated over time. Such kind of diverse user-generated music data contains personal information of users which can be leveraged to predict user preferences. We will show how we identify tags for a specific song and recommend it according to a query from player's listening list.

Contents

Raw feature: Mel-Frequency Cipstal Coefficients (MFCC)
Offline training: Including Principal Components Analysis, k-means clustering, Convolutional Neural Network, Recurrent Neural Network, to extract features
Online recommendation: Extract query features and doing Approximate Nearest Neighbor Searching.



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