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Unleashing the Power of Big Data: Music Information Retrieval and Analysis for Understanding Listener Preferences

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Abstract

In today's era of big data with excess information, music is common and everyday, which shows the huge amount of music data. How to obtain one's favourite music from the massive music database has become a problem, and the emergence of music recommendation systems is also inevitable. In this paper, we take digital piano music as the research object, form comprehensive features using spectrum and notes, design classification methods using convolutional neural networks, and further process the classification results and design recommendation algorithms. The basic method of music recommendation of this algorithm is to determine the structure of the network model, determine the corresponding training model, and improve the parameters on the basis of the typical source network model used in the system experiment. Historical behaviour chooses to collect information. Then, it reads the audio data on the system and retrieves it from Mel, which reveals the identity of the music. The classification proposal achieves its goal by denying the similarity between customer preferences and the potential of two musical characteristics. Two recommended methods based on convolutional neural networks are tested in this article. On the whole, the accuracy of the user's comprehensive feature, recommendation method is higher than the recommendation accuracy rate of the multicategory user. In the comparison experiment of the single-category and multicategory recommendation methods, the average accuracy rate of single-category user feature recommendation is 50.35%; and the recommendation accuracy rate of multicategory user features is higher than the recommendation accuracy rate of single-category user features. The experimental results show that the two recommendation methods can achieve better recommendation results.

Introduction

While multimedia technology is developing rapidly following the pace of the times, we have also entered the era of big data with massive amounts of data. Music is one of the contents of multimedia information. While there is a huge user demand, its own data volume is also very considerable and continues to grow [1]. Nowadays, with abundant music resources, how to efficiently obtain the songs of interest in the vast and complicated sea of music, a targeted solution of a personalized music recommendation system is proposed. better.

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