Problem Chosen	2023 MCM/ICM Summary Sheet	Team Control Number
A		2300000

How ?

Summary

Finally, we perform a sensitivity analysis of the model and investigate the effect of changes in the variable parameters of the model on the results.

Keywords: SNA,

Contents

1 Introduction

1.1 Problem Background

- Applying

1.2 Restatement of Problem

1.3 Literature Review

1.4 Our Work

The work we have done in this problem is mainly shown in the following Figure(1).

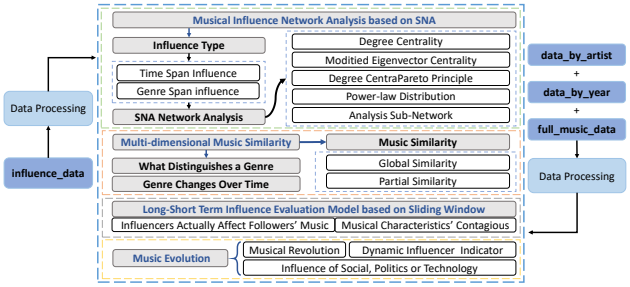

Figure 1: Our Work

2 Assumptions and Notations

2.1 Assumptions

- **Assumption1:** asd

↪***Justification:*** yes

2.2 Notations

The primary notations used in this paper are listed in Table (1).

Table 1: Parameter Settings

Symbols	*Description*
DII	dynamic influencer indicator

3 Models and Results

3.1 Model Overview

▶ Establishment

From genre span: Influence occurs within the same genre and between different genres.

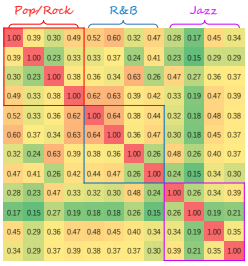

Figure 2: Global Similarity

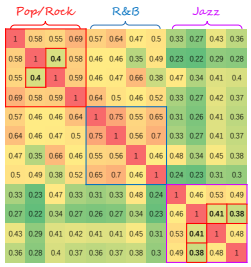

Figure 3: Multi–Similarity

3.1.1 Model Test on Musical Influence Network

Complex networks are usually called scale-free networks[1],as is shown in the Table(4).The cosine similarity between the eigenvectors of music A and music B $S_{cos}(\mathbf{A},\mathbf{B})$ is defined by the following equation(3)

Algorithm 1: disjoint decomposition

input : A bitmap Im of size $w \times l$
output: A partition of the bitmap

```
special treatment of the first line;
for i ← 2 to l do
    special treatment of the first element of line i;
    for j ← 2 to w do
        left ←FindCompress(Im[i, j − 1]);
        up ← FindCompress(Im[i − 1, ]);
        this ← FindCompress(Im[i, j]);
        if left compatible with this then // O(left,this)==1
            if left < this then Union(left,this);
            else Union(this,left);
    foreach element e of the line i do FindCompress(p);
```

Table 2: Add caption

A	B		C	
A	B	B	C	C
A	B	B	C	C

$$S_{global}(\mathbf{A},\mathbf{B}) = S_E(\mathbf{A},\mathbf{B}) + S_{cos}(\mathbf{A},\mathbf{B}) \tag{1}$$

$$distance_{AB} = \sqrt{\sum_{i=1}^{n}(A_i - B_i)^2} \tag{2}$$

$$S_{cos}(\mathbf{A},\mathbf{B}) = 1 + \frac{cos\theta}{2} = 1 + \frac{\mathbf{A}\cdot\mathbf{B}}{2\cdot||\mathbf{A}||\cdot||\mathbf{B}||} = 1 + \frac{1}{2}\cdot\frac{\sum_{i=1}^{n} A_i \cdot B_i}{\sqrt{\sum_{i=1}^{n}(A_i^2)} + \sqrt{\sum_{i=1}^{n}(B_i^2)}} \tag{3}$$

Table 3: Add caption

A	B		C	
A	B	B	C	C
A	B	B	C	C

Table 4: A

A	B	C	D	A
A		B		
A	B		C	
A			B	B
A				

$$\begin{cases} |v_3^{(k)} - v_2^{(k)}| < 0.03 \\ |v_2^{(k)} - v_1^{(k)}| < 0.03 \\ |v_4^{(k)} - v_3^{(k)}| > 0.1 \\ |(v_5^{(k)} - v_4^{(k)}) - (v_4^{(k)} - v_3^{(k)})| < 0.02 \; or \; |v_5^{(k)} - v_4^{(k)}| < 0.03 \\ |(v_6^{(k)} - v_5^{(k)}) - (v_5^{(k)} - v_4^{(k)})| < 0.02 \; or \; |v_6^{(k)} - v_5^{(k)}| < 0.03 \end{cases} \tag{4}$$

4 Strengths and Weaknesses

4.1 Strengths

4.2 Weaknesses

5 Ariticle

空格 \quad

斜体 \emph{} \textit{}

```
\emph{popularity} \textit{popularity}
```

on the *popularity* *popularity* before

强调字体 \textup{} \textit{} \textsl{} \textsc{}

```
\textup{Fashion} \quad \textit{Fashion} \quad \textsl{Fashion} \quad \textsc{Fashion}
```

显示的结果如下

Fashion *Fashion* *Fashion* FASHION

字体加粗 \textbf{}

\textbf{directed music influence network}

a directed music influence network.

黑板粗体 \mathbb{}

```
\mathbb{ABCDEFGHIJKLMNOPQRSTUVWXYZ}
```

效果

$\mathbb{ABCDEFGHIJKLMNOPQRSTUVWXYZ}$

References

[1] Zhang Cungang, Li Ming, Lu Demei. *Social Network Analysis: An Important Sociological Research Method* [J]. Gansu Social Sciences, 2004.

MEMO

To: Experts in The ICM Society
From: Team 2107091
Date: February 8th, 2021
Subject: Analysis of Music Influence and Similarity, Suggestions for Futher Study

Dear experts in the ICM Society:

We are honored to inform you our achievement after performing data analysis and establishing the music influence and similarity evaluation model.

We expect to build a dynamic network in the future in the dimension of time and genre.

Appendix A: Further on

To clarify the importance of using LaTeX in MCM or ICM, several points need to be covered, which are ...

To be more specific, ...

All in all, ...

Anyway, nobody **really** needs such appendix ...

Appendix B: Program Codes

Here are the program codes we used in our research.

test.py

```python
# Python code example
for i in range(10):
    print('Hello, world!')
```

test.m

```
% MATLAB code example
for i = 1:10
    disp("hello, world!");
end
```