Intelligent Agents - Assignment 5

T Sanjev Vishnu

April 23, 2020

1 Introduction

This is your introduction to pattern recognition and you are expected to employ classification algorithms. Do not use predefined packages . Try to code from scratch on your own to understand how the algorithms work.

2 Problem Statement

You have a Music Player and a database of 60 songs. Each song is supposed to be classified as happy, sad, romantic, party, inspiring, edm etc. more the genres the better it is. But you are supposed to atleast have these genres **Happy, Sad, Romance**.

This classification will remain dynamic that is it may change from analysing user patterns. For example : you may have classified a song with a sad score of 9/10 but it may turn out that the song isn't actually as sad as you had concluded. So depending on the the wide set of users and the data they provide your classification shall alter.

2.1 User Interface

Please not that **UI is expected to be Command Line**. Do not waste time making it a GUI.

The user will have an option to play a particular song. You need not actually play the song (**only display the name of the song currently being played**).

If **next** is entered, you have to play the next song depending on the first song the user listened to.

If **skip-next** is entered, assume the user isn't interested in the song you recommended and wants to hear the next recommendation

If **search** is entered, it is implied that the user did not like your recommendation and would like to play another song.

2.2 How to approach

There was a discussion between Tushar, Tanay and me. Do refer to it.

Depending on the history of the user, try to guess the mood of the listener. Recommend

a song from the database which you by now have classified into different moods/genres. But each time the user doesn't appreciate the song suggested by the algorithm, note that you have to make changes to your **source code**.

This is to be done so that the same mistake doesn't repeat and if the number of users reject a particular recommendation increases, a change is inevitable.

Have a particular method to score your algorithm. After each user, re-evaluate the algorithm depending on the score.

Since the number of songs in real life scenarios is in millions, how will you approach in classifying the songs as manually classifying it is time consuming and impractical.

2.3 Note

Develop your project in the GitHub repository mentioned under your team. Please create a new branch before working on it. A very detailed documentation including the working of the algorithm, graphs, guessing the mood and instructions on how to run is expected.

3 Songs

Memories - Maroon5
Closer - The Chainsmokers
Rap God - Eminem
Steal My Girl - One Direction
Love Me Like You Do - Ellie Goulding
2U - David Guetta ft. Justin Bieber
Lose Yourself - Eminem
Summer of '69 - Bryan Adams
Hey Jude - The Beetles
Paper Cut - Linkin Park
The Nights - Avicii
Photograph - Ed Sheeran
You Belong With Me - Taylor Swift
Taki Taki - DJ Snake ft. Selena Gomez, Ozuna, Cardi B
What Do You Mean ? - Justin Bieber
Shape Of You - Ed Sheeran
Love The Way You Lie - Eminem ft. Rihanna
Cheap Thrills - Sia ft. Sean Paul
Thinking Out Loud - Ed Sheeran
Legendary - Welshly Arms
Electricity - Silk City, Dua Lipa ft. Diplo, Mark Ronson
Careless Whisper - George Michael
Astronomia - Vice Stone, Tony Igy
Sweet Child O' Mine - Guns N' Roses
Baby - Justin Bieber
Sweet Home Alabama - Lynyrd Skynrd

Not Afraid - Eminem
Low - Flo Rida
Hymn For The Weekend - Coldplay
Zombie - The Cranberries
All The Stars - Kendrick Lamar, SZA
Hotline Bling - Drake
All Of Me - John Legend
Starboy - The Weeknd ft. Daft Punk
Zedd - Clarity ft. Foxes
Believer - Imagine Dragons
On My Way - Alan Walker, Sabrina Carpenter and Farruko
Perfect - Ed Sheeran
Faded - Alan Walker
Lean On - Major Lazer and DJ Snake ft. Mo
I Like Me Better - Lauv
Running After You - Matthew Mole
I Believe In You -Michael Bublé
You Are Loved - Matthew Mole
Havana - Camila Cabello
Payphone - Maroon 5 ft. Wiz Khalifa
Hips Don't Lie - Shakira
Can We Kiss Forever ? - Kina ft. Adriana Proenza
Dancin - Aaron Smith ft. Luvli (Krono Remix)
Cradles - Sub Urban
Dance Monkey - TONES AND I
La la la - Naughty Boy ft. Sam Smith
Elastic Heart - Sia
Faith - The Weeknd
Physical - Dua Lipa
We Don't Talk Anymore - Charlie Puth ft. Selena Gomez
Youth - Shawn Mendes ft. Khalid
Shallow - Lady Gaga, Bradley Cooper
Someone You Loved - Lewis Capaldi
Girls Like You - Maroon 5 ft. Cardi B

4 Teams

4.1 Team New York City

Abhishek Pai Angle, Tanay Sharma, Dev Moxaj Desai, Madhumitha S, Aum Jain

4.2 Team Los Angeles

Naman Agarwal, Divyanshi Kamra, Prasann Vishwanathan, Tushar Nandy

5 Hall of Fame

Rated out of 200 points the previous assignments,
LA - 95 points
NYC - 91 points

Deadline : **April 24, 23:59 hrs**