

YOUTUBE VIDEO RECOMMENDATION SYSTEM USING K NEAREST NEIGHBOUR ALGORITHM

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LAB SECTION 03



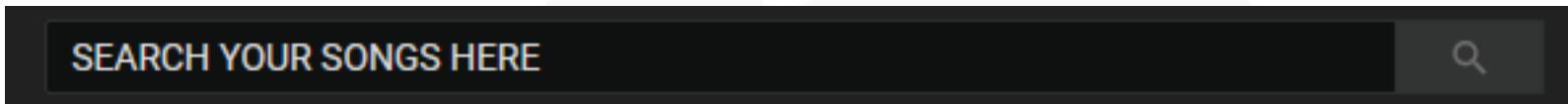
ABOUT THE TOPIC

- SUPERVISED**
- PREDICTION MAKING**
- USER BEHAVIOUR & CHARACTERISTICS**

MUSIC RECOMMENDATION SYSTEM

DATASET DETAILS

- COLUMNS [VIDEO_ID, USER_ID, TITLE, VIEWS, LIKES, DISLIKES, SHARES ETC.]
- **INPUT FEATURES:** A SET OF STRINGS



- **OUTPUT FEATURES:** USER'S LIKABLE SONGS AS RECOMMENDATIONS

Recommended

 Ornob - Hok Kolorob nahian hussain 2.2M views • 9 years ago	 Guns N' Roses - "Wish You Were Here" (Live at Rock In SLASH MOB) 242K views • 5 months ago	 Badri Badariyan - Amit Trivedi feat Mame Khan & Mili Nair, Coke Studio India 2.9M views • 5 years ago	 "TRIBUTE to IDOLS" SINHA BROTHERS Covers Sinha Brothers Project 284K views • 5 months ago	 PORCUPINE TREE - THE START OF SOMETHING Norbert C 824K views • 7 years ago
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MUSIC RECOMMENDATION SYSTEM

DATASET DETAILS

- RELATIONSHIP BETWEEN COLUMNS**
- NO OUTLIERS**
- NO NULL VALUES IN DATASET**

MUSIC RECOMMENDATION SYSTEM

ALGORITHMS

- BAYESIAN CLASSIFIERS
- NEURAL NETWORK ALGORITHMS
- GENETIC ALGORITHMS
- RELEVANCE FEEDBACK
- **KNN (The Algorithm to be used for this project)**

WHY KNN?

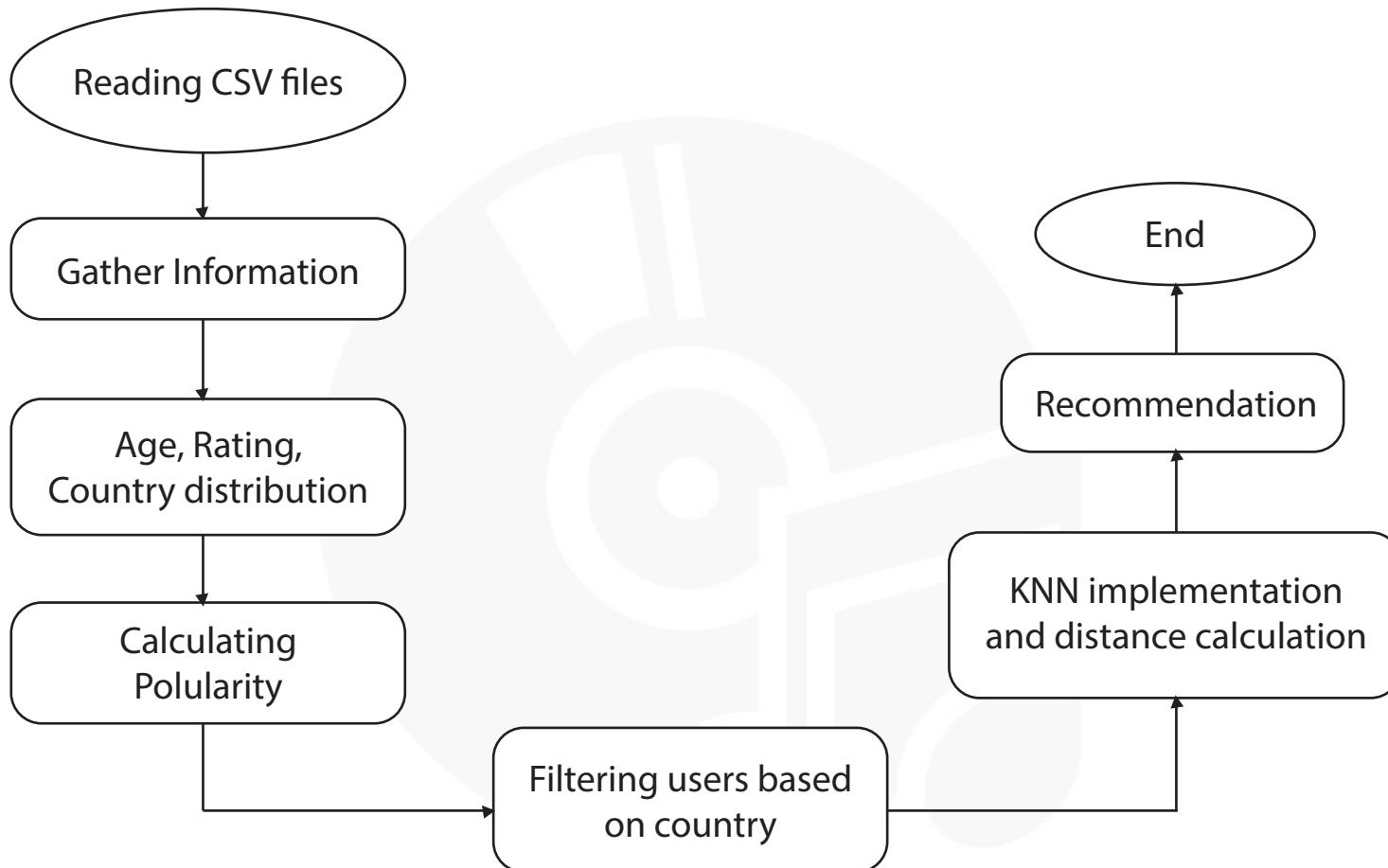
- IT IS FASTER & TRAINING TAKES BAYESIAN TIME
- NO PARAMETERS
- SCIKIT LEARN

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CODE & LIBRARIES

- PYTHON FOR DATA CODING**
- WHY NOT MATLAB**
- LIBRARY: NUMPY, PANDAS, SKLEARN, SCIKIT**
- LARAVEL FOR WEBSITE BACKEND**
- HTML, CSS, BOOTSTRAP, ETC FOR FRONT END**

MUSIC RECOMMENDATION SYSTEM



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THE PROGRAM
SHORT FLOWCHART

EXAMPLE USED AS SAMPLE

DEFINING DATASETS

INTEGRATING & TRANSFORMING DATASETS FOR SIMPLICITY

TAKING INPUT & COMPARING WITH DATASET

APPLYING KNN ALGORITHM TO FIND NEAREST NEIGHBOURS

OUTPUT FITTEST SONGS AFTER KNN IMPLEMENTATION

FINDING SIMILAR ITEMS/SONGS FROM DATASET

We can also use our *item similarity based collaborative filtering model* to find similar songs to any songs in our dataset:

```
is_model.get_similar_items(['U Smile - Justin Bieber'])
```

THE IDEA OF FINDING TRENDS FROM CLASS

Moving Average Cross Over strategy

The moving average crossover strategy is used to find a trend (uptrend/downtrend). A trend defines values move in a specific direction over a period of time. It is important to be able to define a trend and jump on (for buy/sell) as soon as it is recognizable to gain most profit or reduce loss.

```
is_model = Recommenders.item_similarity_recommender_py()  
is_model.create(train_data, 'user_id', 'song')
```

CREATING USER SPECIFIC TRAINING DATA FOR TEST RUN

EXPECTED RESULTS

- A **CONTENT BASED STRATEGY IS USED**
THEREFORE, RECOMMENDATIONS WILL BE CONTENT SPECIFIC
- ACCURACY OF RECOMMENDATIONS: SATISFACTORY
- A **HYBRID OF CONTENT BASED & COLLABORATIVE BASED SOLUTION**
WILL GIVE US MORE ACCURATE PREDICTIONS & RECOMMENDATIONS.

Recommendations for The Chainsmokers - You Owe Me:

1: Original Bellas rehearsal video from Pitch Perfect 1, with distance of Original Bellas rehearsal video from Pitch Perfect 1:
2: Official Jeep Super Bowl Commercial | Jeep Jurassic, with distance of Official Jeep Super Bowl Commercial | Jeep Jurassic:
3: PLAYERUNKNOWN'S BATTLEGROUNDS Xbox Action Trailer, with distance of PLAYERUNKNOWN'S BATTLEGROUNDS Xbox Action Trailer:

In [2]:

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CONCLUSIVE REMARKS

- WE ARE KEEN TO PUBLISH PAPERS ON THE TOPIC
- FUTURE: TO MAKE IT MORE PERSONALIZED

ADDITIONAL FEATURES FOR DATASET:

- RECOMMENDATIONS BASED ON TIME OF THE DAY

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REFERENCES:

SCIENCE BLOG: TOWARDS DATA SCIENCE

<https://towardsdatascience.com/how-to-build-a-simple-song-recommender-296fcbc8c85>

KAGGLE

<https://www.kaggle.com/datasets?sortBy=hotness&group=public&page=1&pageSize=20&size=all&filetype=all&license=all>

GITHUB

https://github.com/dvysardana/RecommenderSystems_PyData_2016/blob/master/Recommenders.py

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**THANK YOU.
QUESTIONS?!**

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