



Music Reccomendation System

Presented By:
Raj Walnekar
Mayur Jaisinghani



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Introduction

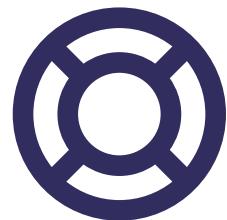
Music recommendation systems play a crucial role in enhancing user experience by providing personalised music suggestions based on their preferences

**Music is the color
for the world and
everything in it**



Dataset Overview

FMA Dataset



The Free Music Archive (FMA) is a large-scale dataset for evaluating several tasks in Music Information Retrieval.

Size



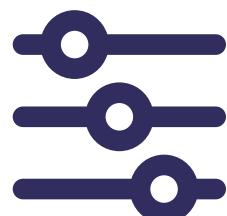
106,574 tracks from 16,341 artists and 14,854 albums

Variation



917 GiB and 343 days of Creative Commons-licensed audio.

Types



Arranged in a hierarchical taxonomy of 161 genres.

Professional



518 pre-computed features per track

Many Songs

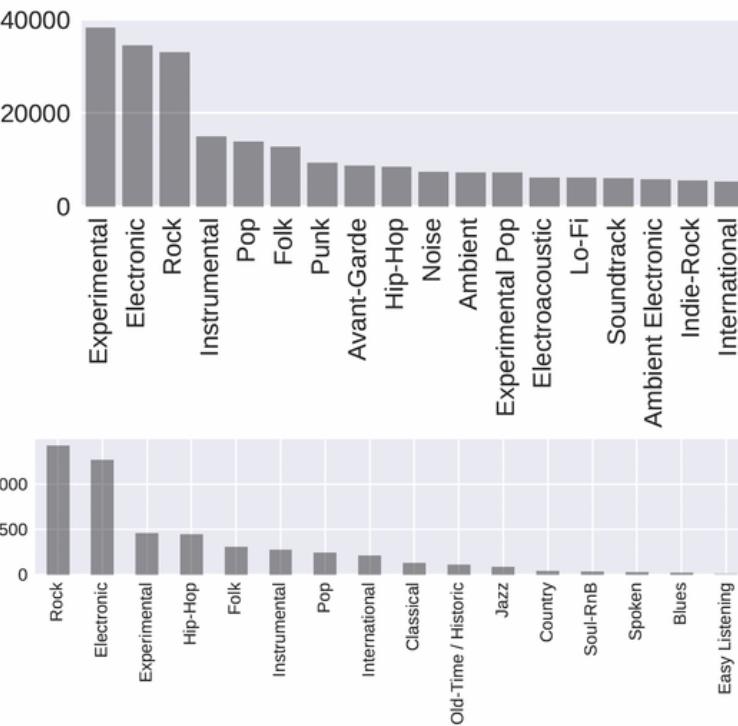


Enough Data to work with for desired applications

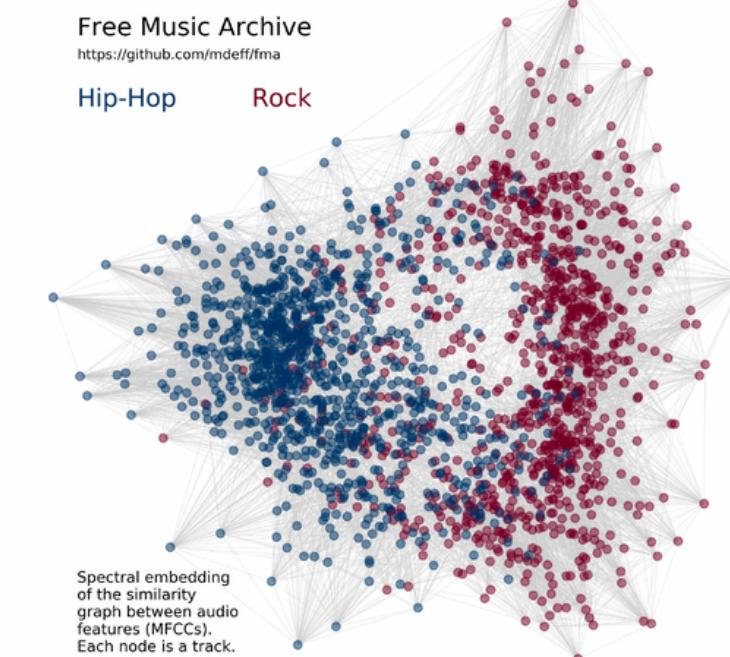
Data: metadata

100% track_id	100% title	93% number
2% information	14% language_code	100% license
4% composer	1% publisher	1% lyricist
98% genres	98% genres_all	98% genres_top
100% duration	100% bit_rate	100% interest
100% #listens	2% #comments	61% #favorites
100% date_created	6% date_recorded	22% tags
100% album_id	100% title	
94% type	96% #tracks	
76% information	16% engineer	18% producer
97% #listens	12% #comments	38% #favorites
97% date_created	64% date_released	18% tags
100% artist_id	100% name	25% members
38% bio	5% associated_labels	
43% website	2% wikipedia_page	
	5% related_projects	
37% location	23% longitude	23% latitude
11% #comments	48% #favorites	10% tags
99% date_created	8% active_year_begin	
	2% active_year_end	

Data: genre distribution



Usage example: clustering & visualization



Meta Data

Genre
Distribution

Clustering

Methodology

K-Means Algorithm

- Clustering analysis
- Group similar music tracks based on **Genre tags, artist based, mixed genre (for new users)**.

Birch Algorithm

- Balanced Iterative Reducing and Clustering using Hierarchies

MiniBatch K-Means Algorithm

- Differ in their approaches to updating the cluster centroids

Pre Processing



Artist Based

track_id	artist_name	genre	album_title	track_title
34660	Zehu	51%	AvantGarde International Blues Jazz	Hadri Ha'Kat
34661	Zehu	51%	AvantGarde International Blues Jazz	Blender Tzivoni
34662	Zehu	51%	AvantGarde International Blues Jazz	Naniah
34663	Zehu	51%	AvantGarde International Blues Jazz	Yoter Miday
34664	Zehu	51%	AvantGarde International Blues Jazz	Yamim, Lielot

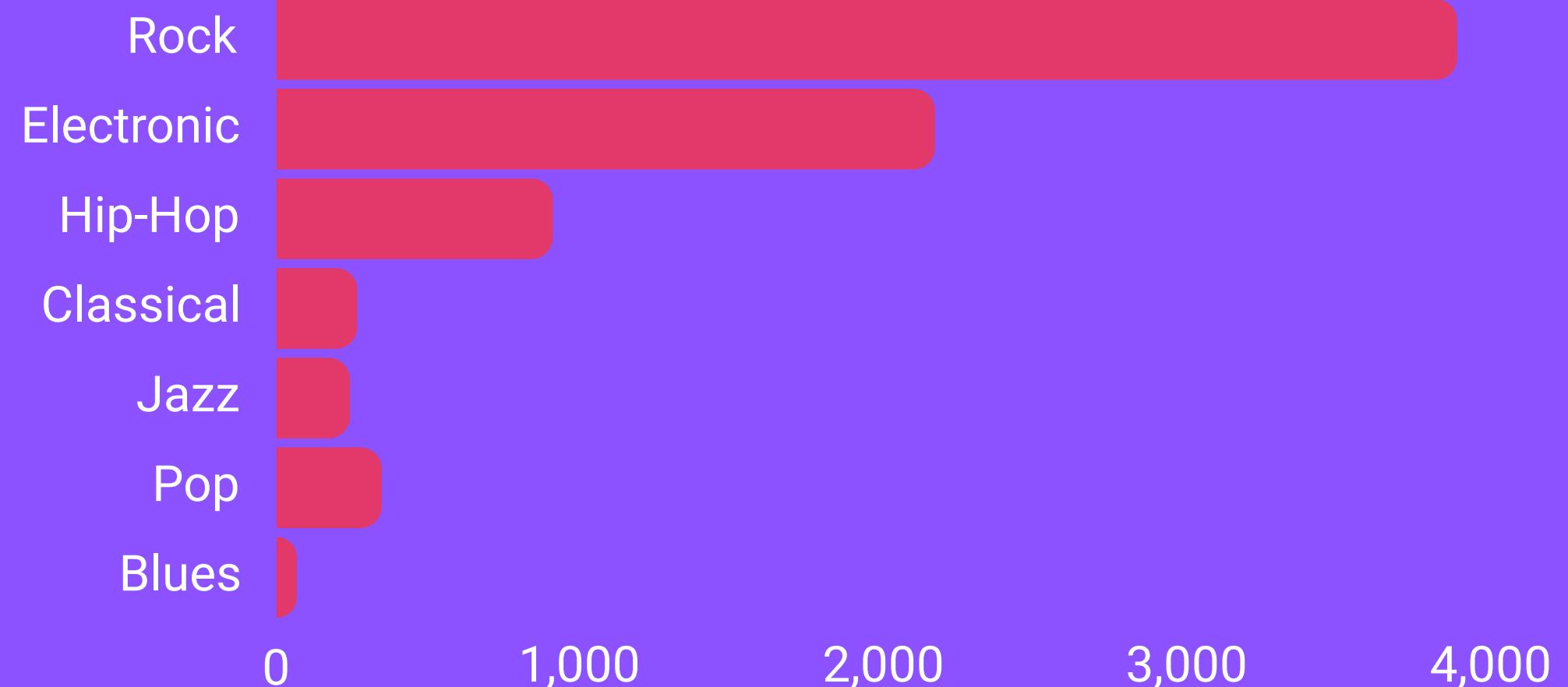
Genre Based

track_id	album_title	artist_name	genre	track_title
153	Arc and Sender	Arc and Sender	Rock	Hundred-Year Flood
154	Arc and Sender	Arc and Sender	Rock	Squares And Circles
155	unreleased demo	Arc and Sender	Rock	Maps of the Stars Homes
169	Boss of Goth	Argumentix	Rock	Boss of Goth
170	Nightmarcher	Argumentix	Rock	Industry Standard Massacre

Mixed Based

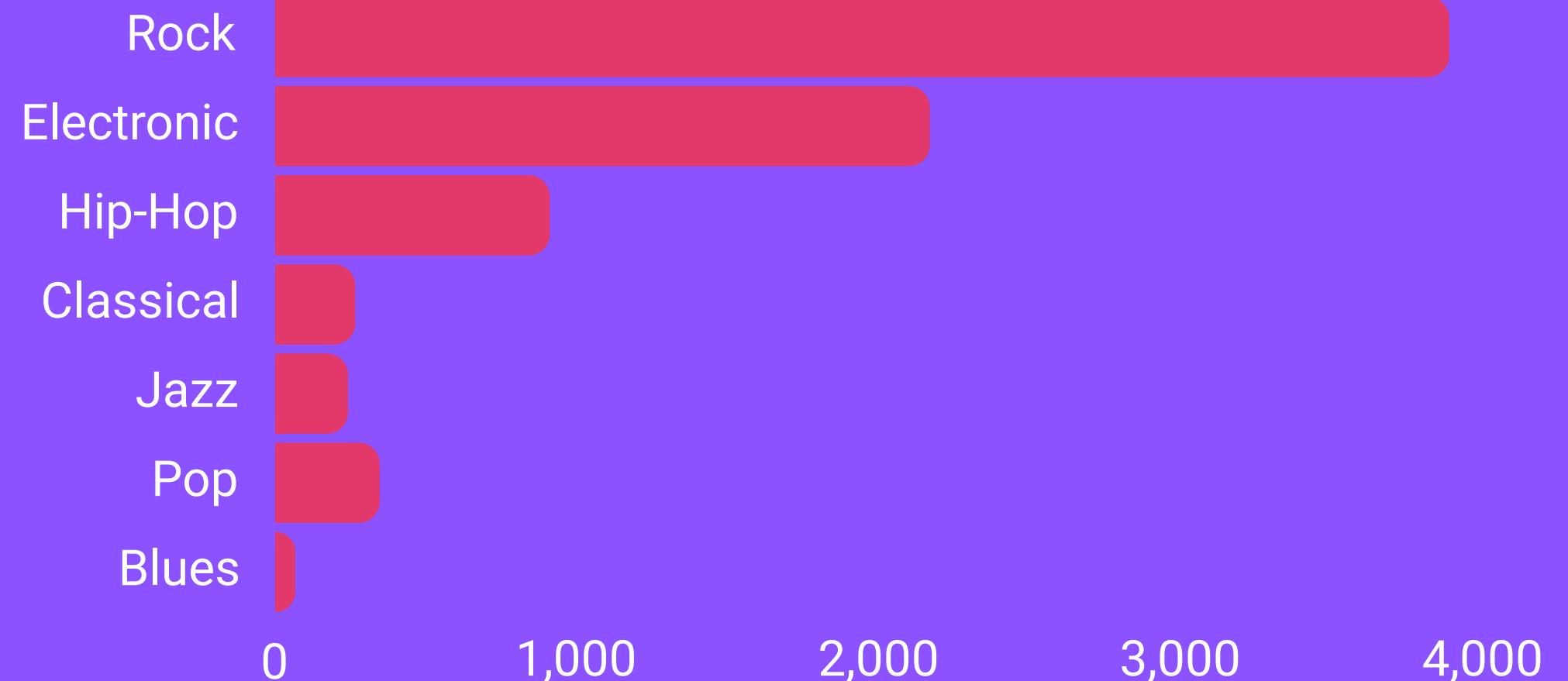
track_id	album_title	artist_name	genre	track_title
19924	Food Miles	THF Drenching	AvantGarde International	Jazz Of Work
14797	Philly Time!	someone else	Electronic	goofball (jamie morris remix)
13322	netBloc Vol. 08: I Copyleft!	Irreversíveis	AvantGarde International	O Hohem Invisível
24318	Live at Jetto Festival	Daan Hendriks	AvantGarde International	More Afro
22376	Interiority	Herv	Electronic	What have I done

Genre-Results



track.7 genre_top	
Rock	3892
Electronic	2170
Avant-Garde International	1902
Avant-Garde International Blues	1507
Hip-Hop	910
Folk	874
Old-Time ↴ Historic	357
Pop	346
Avant-Garde International Blues Jazz	269
Classical	265
Jazz	241
International	133
Instrumental	84
Avant-Garde International Blues Jazz Classical	82
Blues	66
Experimental	17
Avant-Garde International Blues Jazz Classical Novelty	14
Name: count, dtype: int64	

Artist-Results



track_id	album_title	artist_name
124857	Do You Know The Word	BASIC
124862	Do You Know The Word	BASIC
124863	Do You Know The Word	BASIC
124864	Do You Know The Word	BASIC
124911	Suicide Beauty Girl	Yusuke Tsutsumi

track_id	album_title	artist_name
2	AWOL - A Way Of Life	AWOL
3	AWOL - A Way Of Life	AWOL
5	AWOL - A Way Of Life	AWOL
10	Constant Hitmaker	Kurt Vile
134	AWOL - A Way Of Life	AWOL



Thank You

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