

Generating Music playlists using K-means clustering



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Presenters: Bruna, Inan and Sibulele



Methodology

Explore and clean
the data



Step 1



Explore and clean
the data

Normalize: minmax
normalization

Step 1

Step 2



Explore and clean
the data

Normalize: minmax
normalization

Explore the data using
k mean values

k = number of playlists

Step 1

Step 2

Step 3



Explore and clean
the data

Normalize: minmax
normalization

Explore the data using k
means
k = number of playlists

Create more plots
with those k values

Step 1

Step 2

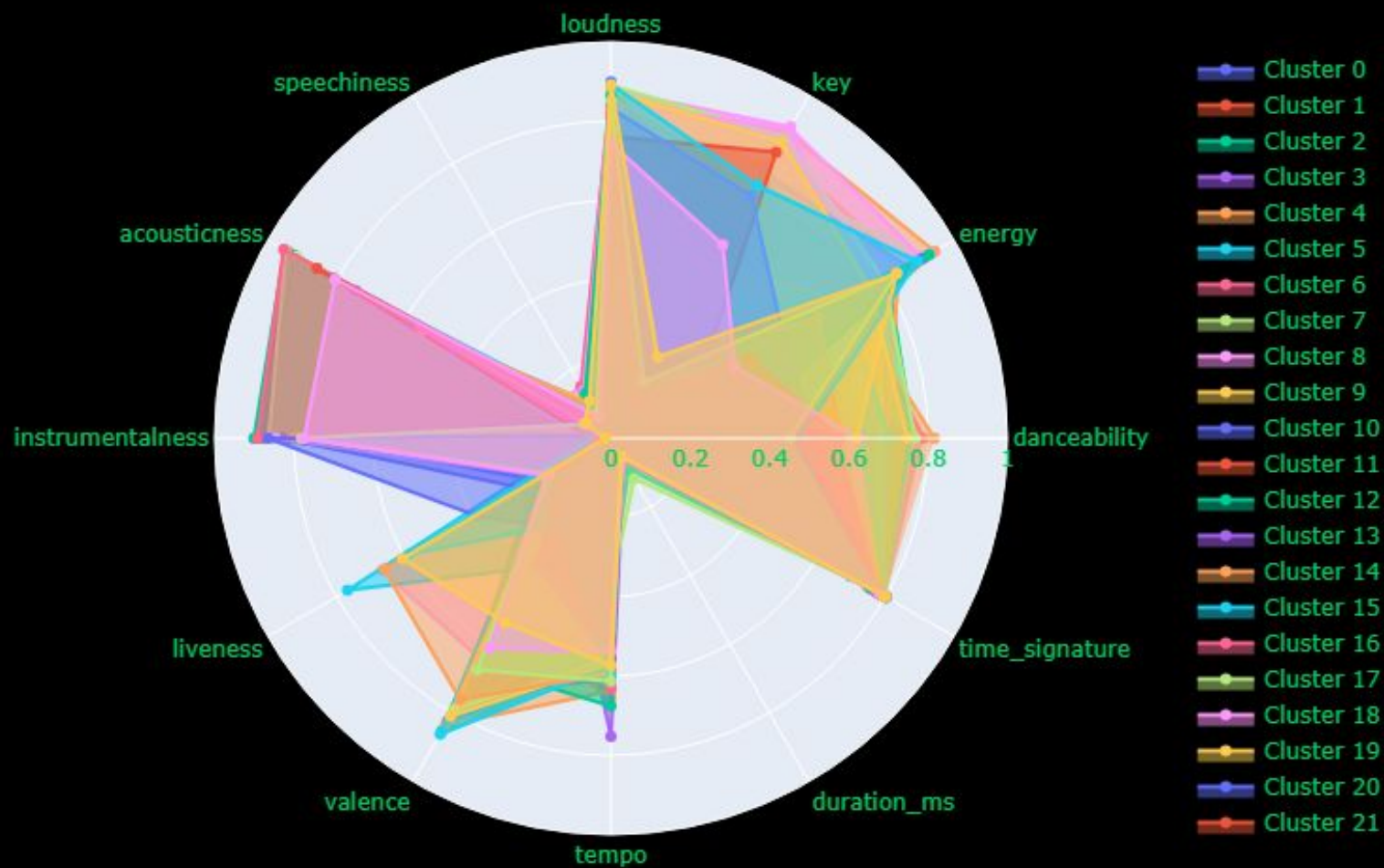
Step 3

Step 4



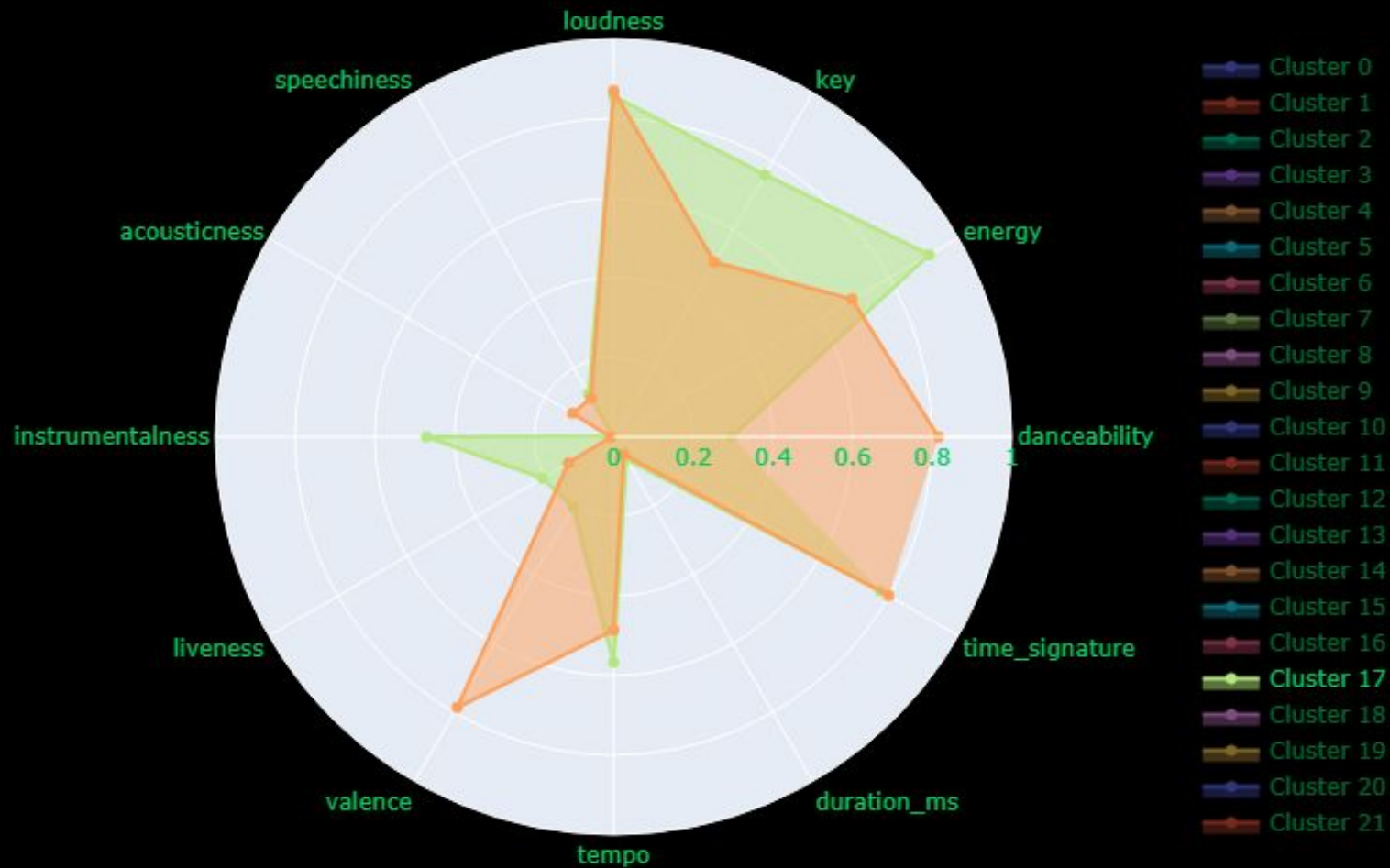
Radar chart

Mean preferences by chart



Radar chart

Mean preferences by chart—comparing two playlists





Prototypes



+ 2 Distinct playlists:

- **Hype Mode: On**
- **Road Trip to Berlin**



Hype Mode: On



Playlist

Hype Mode: ON







Playlist generated using unsupervised learning for educational purposes "Turn up the volume and energy take over!...

Sibulele Ngomane • 11 songs, 54 min 47 sec



...

List

#	Title	Album	Date added	
1	 Archie, Marry Me Alvays	Alvays	35 minutes ago	3:16
2	 Tornar a estar bé Súper Gégant	Camina i oblida	34 minutes ago	2:07
3	 Heroes - 2017 Remaster David Bowie	"Heroes" (2017 Remaster)	34 minutes ago	6:11
4	 Raining Blood Slayer	Reign In Blood (Expanded)	34 minutes ago	4:15
5	 L'enfant sauvage Gojira	L'Enfant Sauvage (Special Edition)	25 minutes ago	4:17
	 Helicopter - Video Edit Martin Garrix, Firebeatz	Helicopter (Video Edit)	33 minutes ago	3:00

“

Turn up the volume and let energy take over! **Hype Mode: ON** is your ultimate adrenaline-fueled playlist. These **104** tracks are designed to push you to the limit—whether you're hitting the gym or a night out! Crank it up!

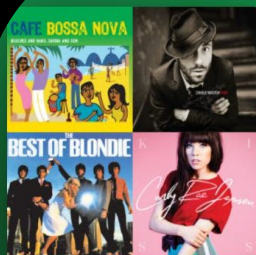
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Roadtrip to Berlin

DA007 & DS037 Edition



Playlist








Roadtrip to Berlin

DA007 & DS037 Edition

lelamuench • 1 salvamento • 155 músicas, cerca de 9h



...

#	Titulo	Álbum	Adicionada em
1	 Mas Que Nada Rio Combo	Café Bossa Nova - Beaches And Bars, Samba And S...	há 18 horas
2	 Heart Of Glass - Special Mix Videoclipe • Blondie	Best Of Blondie	há 18 horas
3	 In Your Hands Charlie Winston	Hobo	há 18 horas
4	 Call Me Maybe Videoclipe • Carly Rae Jepsen	Kiss	há 15 horas
5	 Dynamite Videoclipe • Taio Cruz	The Rokstarr Hits Collection	há 18 horas
6	 Dancing Machine - Single Version The Jackson 5	Colour Collection (International Version)	há 18 horas
7	 Dolce Vita Ryan Paris	Dance From The 80s	há 18 horas



Buckle up and hit the road with the ultimate **Roadtrip to Berlin DA007 & DS037 playlist**—crafted for the legends of WBS School of Coding! Whether you're cruising down the autobahn, stuck in Berlin traffic, or waiting for yet another delayed Deutsche Bahn train, these tracks will fuel your journey with energy, nostalgia, and pure greatness!





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PROS



- Quick , simple and scalable way to create playlists



- It is accessible, you don't need to be a musical expert to use the model to create a playlist



- It manages to create distinct playlists that do not completely overlap



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CONS



- Does not account for qualitative features of types of songs such as “genre” which some customers might also associate with mood



- The number of songs per playlist varies which could lead to product marketing and pricing issues for customers



- It can't completely replace manual work, you still have to check to make sure the playlist makes sense



- It's not clear whether these features alone are directly linked to “mood” because “mood is subjective”



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KEY SUCCESS CRITERIA FOR EVALUATING K-MEANS MODELS



Interpretability

- Yes, the playlists are distinct! But some playlists have songs to do not fit well together



Business Relevance

- Depends on how bespoke the playlists should be but the prototypes are not ready shipped to market without human editing



Discovery of new patterns

- Yes, some otherwise different genres can be clustered together based on features alone

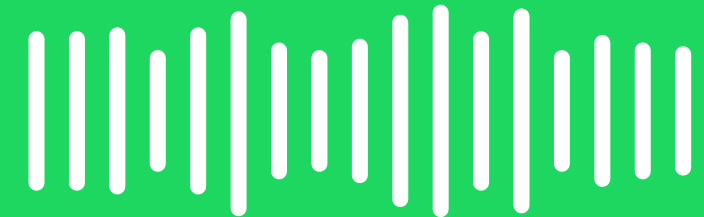
Recommendations

Balance Pros and Cons:

- Moosic could use K-means clustering as the **first step to** automatically generate distinct playlists based on audio features like tempo, energy, acoustics



- To enhance **quality**, engagement, and **market relevance**, **human recognition** should involve music and marketing experts to **refine** and **curate** the final selections

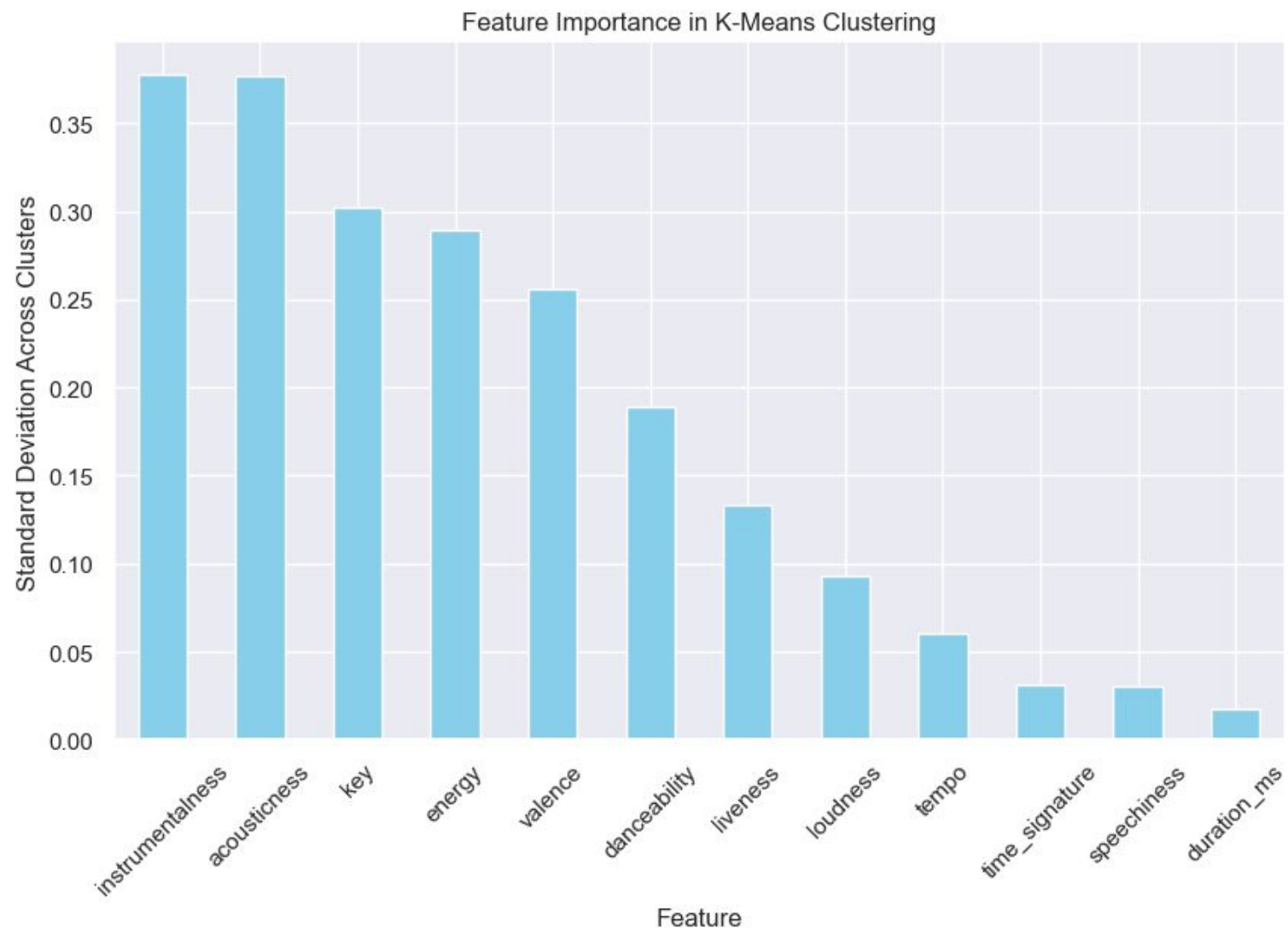


Thank you for your time!



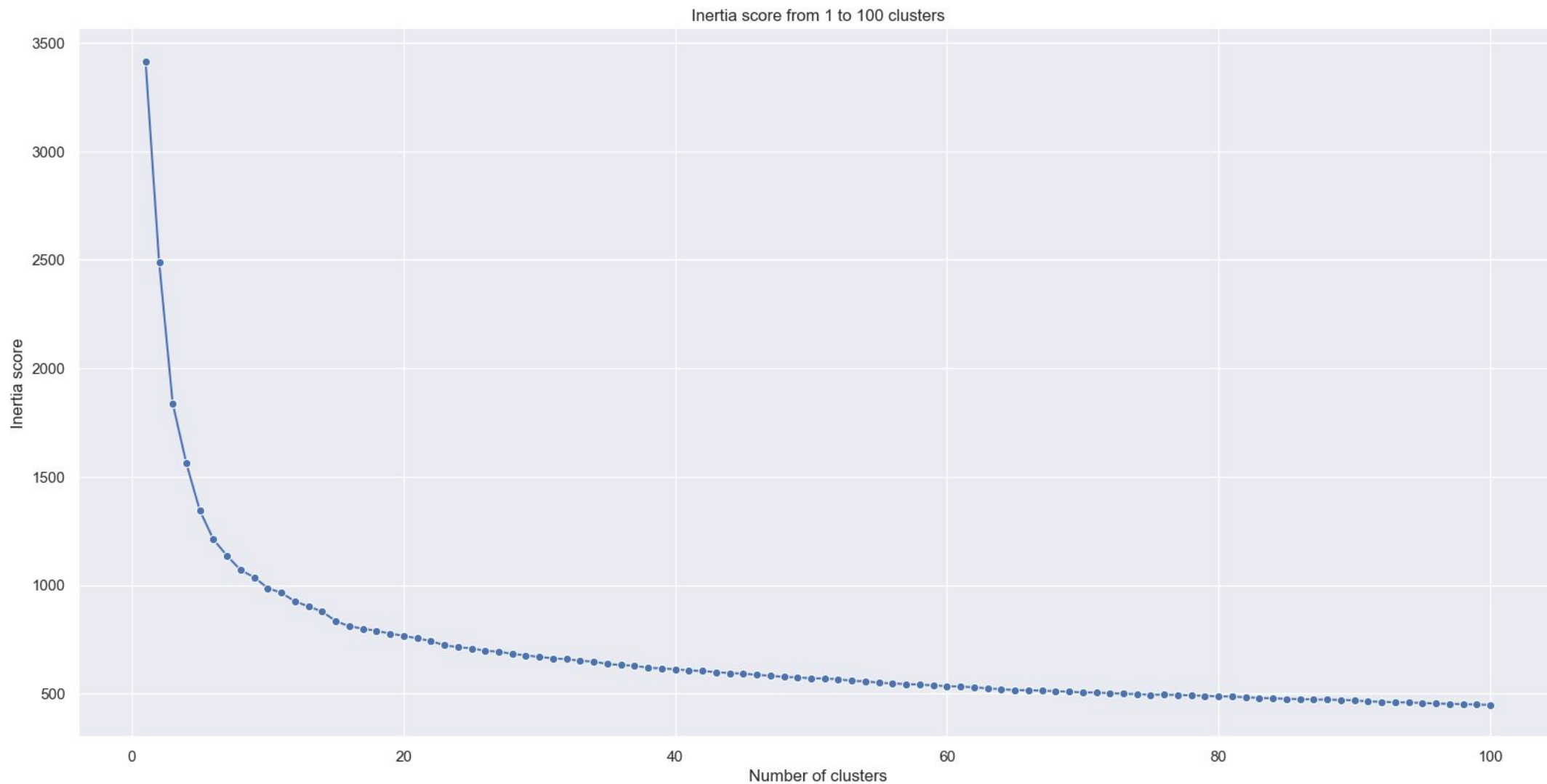


Appendix





Appendix





Appendix

