Spotify Analysis: Illenium

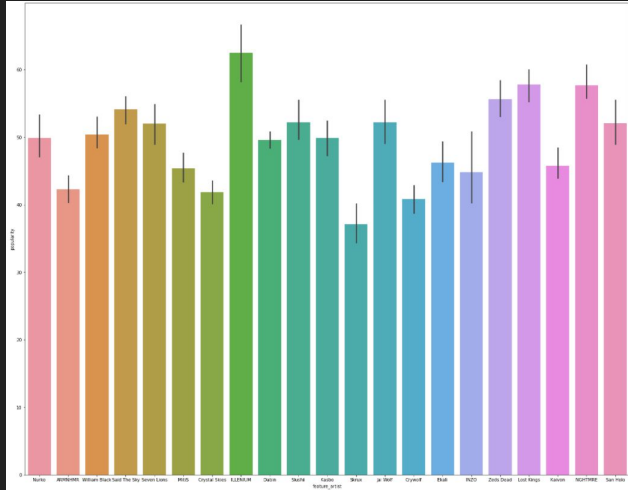Nathan Knudsen

The Project

Spotify Analysis of the artist Illenium

My Approach

- 20 artists most similar to Illenium
- Top 10 tracks each
- Pulled in track features for analysis and modeling

		artists	id	name	popularity	danceability	energy	key	loudness	mode	speechiness	acousticness
212		The Chainsmokers, ILLENIUM, Lennon Stella	3g0mEQx3NTanacLseoP0Gw	Takeaway	76	0.528	0.511	3.0	-8.144	1.0	0.0324	0.126000
192		NGHTMRE, SLANDER, Matthew Santos	0suLmBuEbatdochI4tHduq	FEELING GUD	70	0.484	0.940	5.0	-3.682	0.0	0.2570	0.014500
215		ILLENIUM, Tori Kelly	1suqXPrYygZ7BYiSfaVZE4	Blame Myself	69	0.416	0.675	8.0	-6.109	1.0	0.0821	0.050400
214		Gryffin, ILLENIUM, Daya	0Ev562zA4pmUsBqjxsxxdx	Feel Good (feat. Daya)	69	0.625	0.707	2.0	-4.761	1.0	0.0337	0.220000
219		ILLENIUM, X Ambassadors	70YPzqSEwJvAIQ6nMs1cjY	In Your Arms (with X Ambassadors)	66	0.404	0.806	2.0	-4.750	1.0	0.0496	0.198000
140		INZO	4K9xid96G3YmIvQZXN9SXg	Overthinker	66	0.472	0.605	8.0	-4.437	1.0	0.1340	0.031100
150		Zeds Dead, MKLA	5bFuHlXKw66Uu2cHKn5bf8	Alive	65	0.618	0.758	8.0	-7.996	1.0	0.0336	0.008700
67		Slushii	1gAPybZsQhhr7L8WgDneyj	All I Need	65	0.820	0.948	4.0	-3.154	1.0	0.0920	0.003740
220		ILLENIUM, Jon Bellion	3LxG9HkMMFP0MZuiw3O2rF	Good Things Fall Apart (with Jon Bellion)	64	0.643	0.603	2.0	-5.416	1.0	0.0311	0.012000

Exploratory Data Analysis

Average Popularity by Artist

Feature Correlation to Popularity

Modeling

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RandomForestRegressor Score: 0.8676443854268774

predictions: [54.96 47.89 47.63 51.95 51.14 53.02 48.68 49.68 47.07 48.99 48.04 50.49
 50.56 48.5  59.65 50.22 49.77 55.2  48.56 46.98 53.14 47.96 47.25 47.57
 46.97 53.3  52.92 45.68 45.94 49.01 53.08 49.42 52.11 50.21 53.2  53.68
 52.73 53.   46.47 46.54 47.21]

        r2_score : -0.21291509246816398
        explained_variance_score : -0.2089135044047694
        mean_absolute_error : 6.943658536585366
```

Random Forest Regressor Model

	danceability	energy	key	loudness	mode	speechiness	acousticness	instrumentalness	liveness	valence	tempo	time_signature	pred_popularity
287	0.30	0.06	3.36	-13.76	0.79	0.15	0.10	0.80	0.68	0.67	126.74	2.85	57.63
302	0.87	0.92	1.38	-10.54	0.49	0.26	0.04	0.51	0.67	0.96	88.49	3.16	57.41
696	0.17	0.77	8.46	-11.77	0.03	0.29	0.00	0.07	0.68	0.85	111.06	3.79	57.20
824	0.81	0.75	9.82	-3.04	0.29	0.14	0.11	0.57	0.66	0.69	110.22	3.10	57.16
776	0.87	0.73	7.75	-9.54	0.63	0.05	0.31	0.21	0.67	0.67	112.32	1.92	57.14

Randomly Generated Dataset with predicted popularity

Our Stakeholder

3 Suggestions

- Utilize the feature values in the first row of the prediction dataframe
- Collaborate with other artists high on the popularity list
- Ignore the Model and artistically create music

Suggestion #1

Utilize the feature values in the first row of the prediction dataframe

	danceability	energy	key	loudness	mode	speechiness	acousticness	instrumentalness	liveness	valence	tempo	time_signature	pred_popularity
287	0.30	0.06	3.36	-13.76	0.79	0.15	0.10	0.80	0.68	0.67	126.74	2.85	57.63

	artists	id	name	popularity	danceability	energy	key	loudness	mode	speechiness	acousticness	instrum
212	The Chainsmokers, ILLENIUM, Lennon Stella	3g0mEQx3NTanacLseoP0Gw	Takeaway	76	0.528	0.511	3.0	-8.144	1.0	0.0324	0.126	0.0

```
Illenium Average Popularity 62.5
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Suggestion #2

Collaborate with other artists high on the popularity list

	artists	id	name	popularity
212	The Chainsmokers, ILLENIUM, Lennon Stella	3g0mEQx3NTanacLseoP0Gw	Takeaway	76
192	NGHTMRE, SLANDER, Matthew Santos	0suLmBuEbatdochl4tHduq	FEELING GUD	70
215	ILLENIUM, Tori Kelly	1suqXPrYygZ7BYiSfaVZE4	Blame Myself	69
214	Gryffin, ILLENIUM, Daya	0Ev562zA4pmUsBqjxsxxdx	Feel Good (feat. Daya)	69
219	ILLENIUM, X Ambassadors	70YPzqSEwJvAlQ6nMs1cjY	In Your Arms (with X Ambassadors)	66
140	INZO	4K9xid96G3YmIvQZXN9SXg	Overthinker	66
150	Zeds Dead, MKLA	5bFuHIXKw66Uu2cHKn5bf8	Alive	65

Suggestion #3

Ignore the Model and artistically create music

	danceability	energy	key	loudness	mode	speechiness	acousticness	instrumentalness	liveness	valence	tempo	time_signature	pred_popularity
287	0.30	0.06	3.36	-13.76	0.79	0.15	0.10	0.80	0.68	0.67	126.74	2.85	57.63

	artists	id	name	popularity	danceability	energy	key	loudness	mode	speechiness	acousticness	instrun
212	The Chainsmokers, ILLENIUM, Lennon Stella	3g0mEQx3NTanacLseoP0Gw	Takeaway	76	0.528	0.511	3.0	-8.144	1.0	0.0324	0.126	0.0

Illenium Average Popularity 62.5

Conclusion

Illenium could go without implementing the model as he is already popular enough. Any artist that needs help improving popularity (with the threshold popularity being 57) could instead use the model

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Illenium Average Popularity 62.5
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Nurko Average Popularity 49
ARMNHMR Average Popularity 42
William Black Average Popularity 50
Said The Sky Average Popularity 54
Seven Lions Average Popularity 52
MitiS Average Popularity 45
Crystal Skies Average Popularity 41
ILLENIUM Average Popularity 62
Dabin Average Popularity 49
Slushii Average Popularity 52
Kasbo Average Popularity 49
Skrux Average Popularity 37
Jai Wolf Average Popularity 52
Crywolf Average Popularity 40
Ekali Average Popularity 46
INZO Average Popularity 44
Zeds Dead Average Popularity 55
Lost Kings Average Popularity 57
Kaivon Average Popularity 45
NGHTMRE Average Popularity 57
San Holo Average Popularity 52
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