

MUSIC ARTISTS

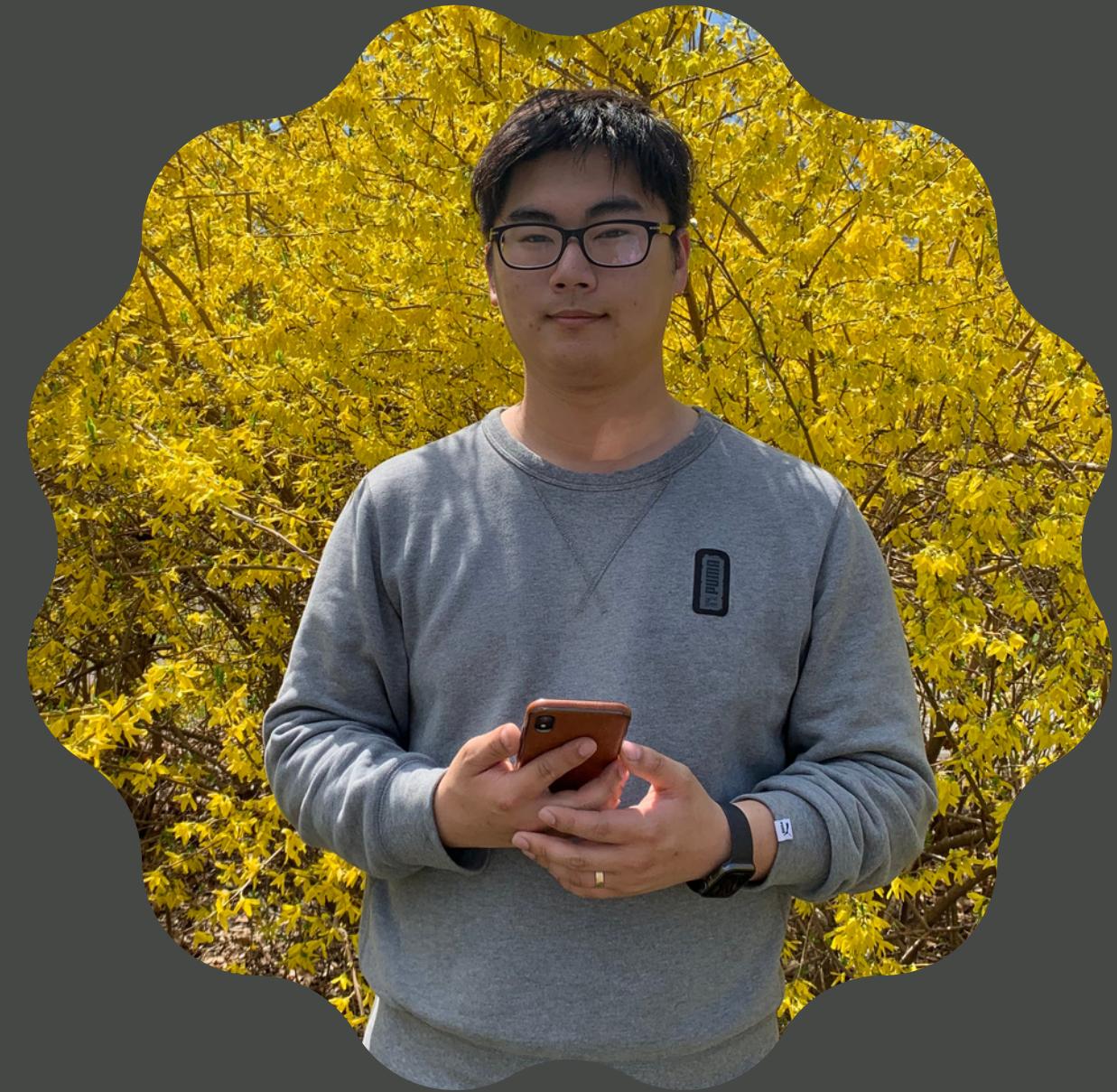
BY SPOTIFY CHART



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YEONJAE ZHANG





WELCOMING MESSAGE

Hello, Everyone!
Name: Yeonjae Zhang.
Title: Data Scientist
I'm so excited to show my project.

PROJECT

I created a project to help record labels. They are always looking for artists to join. All artists have potential. However, this project recommends artists with growth potential..

	TRACK	STREAMS
1	– Blinding Lights by The Weeknd	6,329,218
2	– The Box by Roddy Ricch	5,718,614
3	– Dance Monkey by Tones And I	5,566,567
4	▲ La Difícil by Bad Bunny	4,941,288
5	▼ Don't Start Now by Dua Lipa	4,915,903
6	● Baby Pluto by Lil Uzi Vert	4,691,613
7	– Si Veo a Tu Mamá by Bad Bunny	4,218,770
8	▼ Intentions (feat. Quavo) by Justin Bieber	4,202,807
9	▼ Ignorantes by Bad Bunny	4,061,783

POINTS TO THINK

Which artists are effective and efficient?

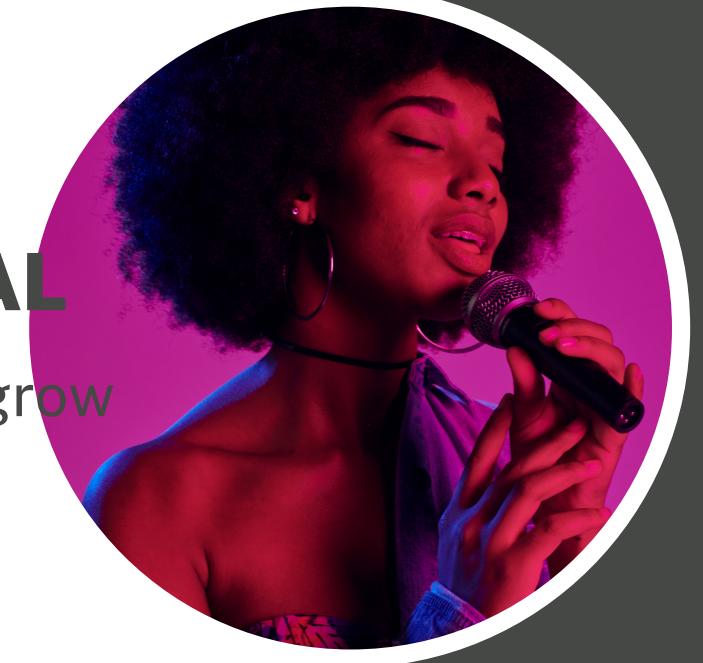
COST

Will the sales grow as much as the money you spend?

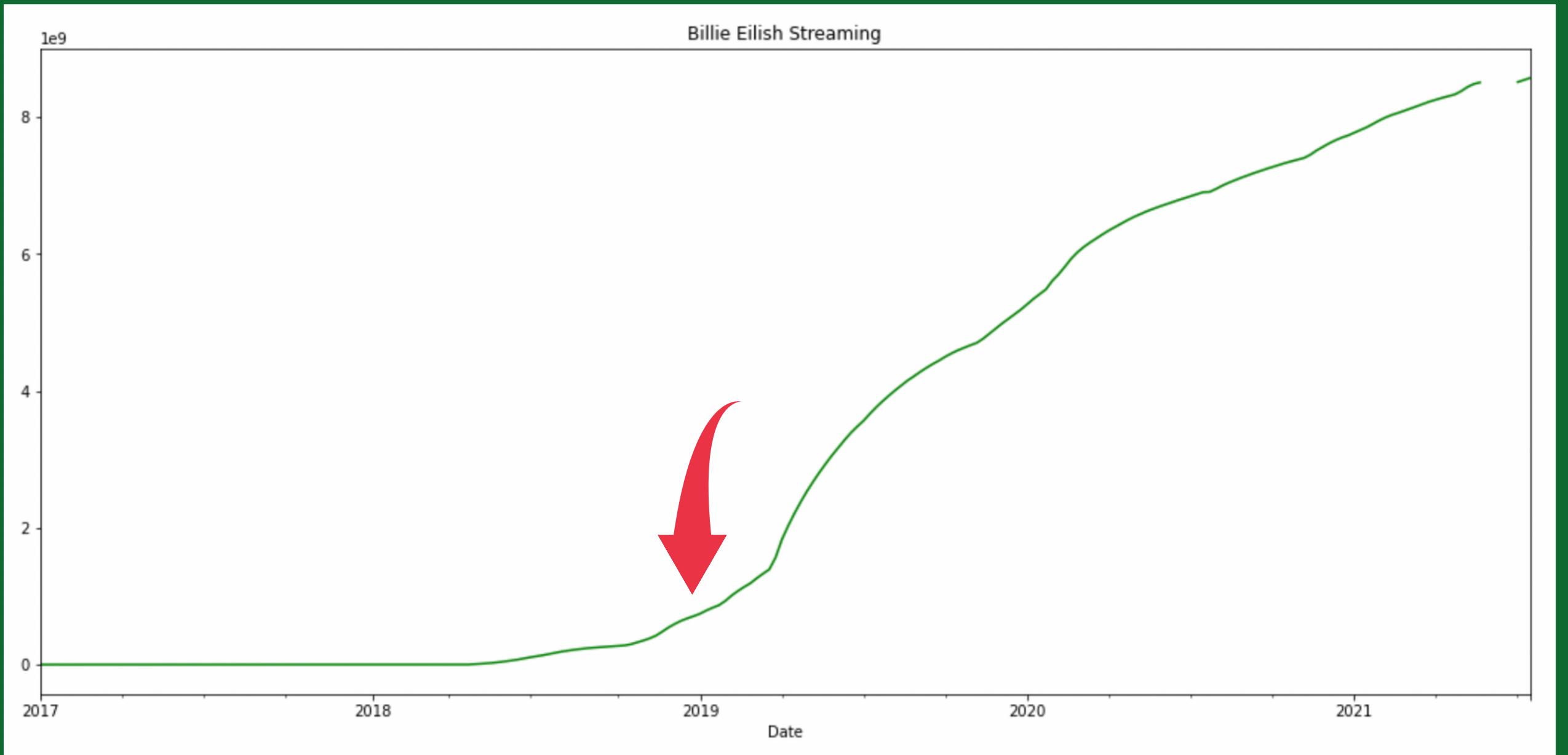


GROWTH POTENTIAL

Will the artist's influence grow further after contraction?



BILLIE EILISH STREAMING



When was the best time to sign a contract? Growth potential is not very visible before 2019. However, after 2019, we can see streaming booming. If any labels had predicted the singer's future growth before 2019, they would have signed a contract with Billie Eilish. The label would have made huge profits

WHAT I DO?

I process data provided by Spotify to recommend effective and efficient artist candidates



DETERMINING GROWTH

Predict the future growth potential of singers



ARTIST SEGMENTATION

Divide singers into different groups.

ABOUT DATA

I got the Top 200 Streaming Chart from Spotify. This data includes charts from 2017 to 2021.

Position	Track Name	Artist	Streams	Date	Genre
0	1 Starboy	The Weeknd	3135625	2017-01-01	['canadian pop', 'canadian contemporary r&b', ...]
1	2 Closer	The Chainsmokers	3015525	2017-01-01	['pop', 'pop dance', 'tropical house', 'edm', ...]
2	3 Let Me Love You	DJ Snake	2545384	2017-01-01	['pop', 'electronic trap', 'dance pop', 'edm', ...]
3	4 Rockabye (feat. Sean Paul & Anne-Marie)	Clean Bandit	2356604	2017-01-01	['pop', 'uk dance', 'dance pop', 'uk funky', ...]
4	5 One Dance	Drake	2259887	2017-01-01	['toronto rap', 'canadian pop', 'canadian hip ...']

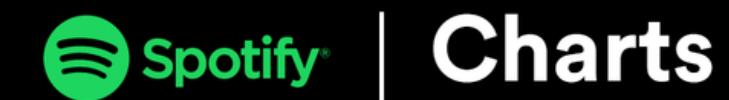
1,128 Artists are in this 4 years chart

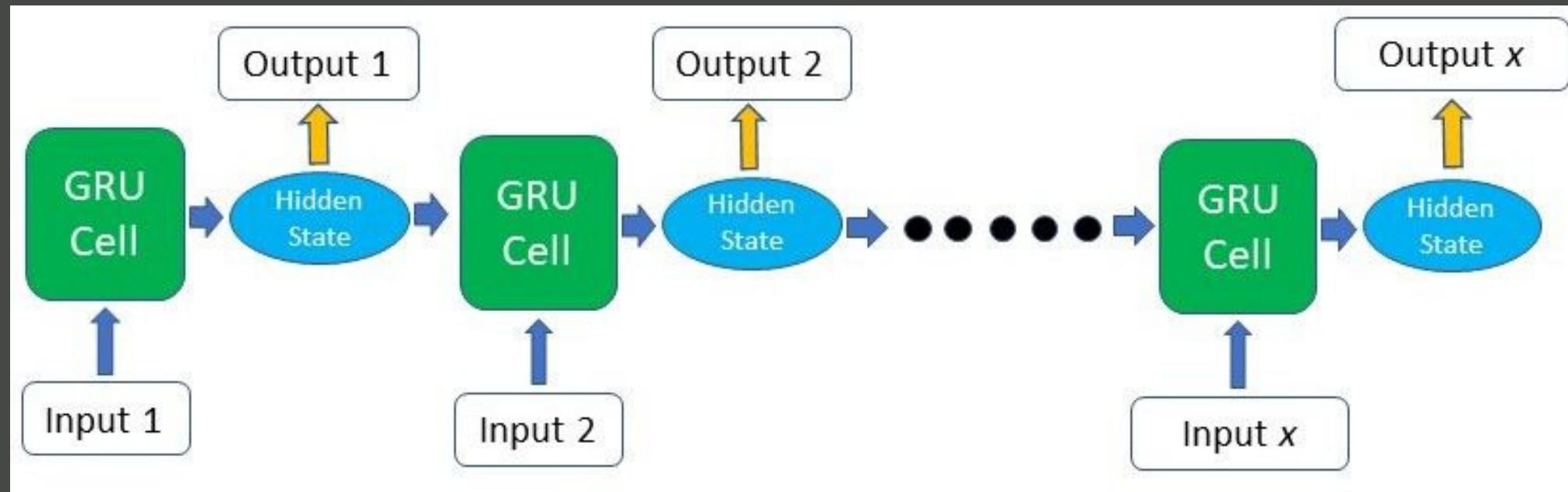
Each song have average 1,188,494 streams each day

The singer with the most streams in four years is Post Malone. 13,513,461,417 Streams

The singer with the fewest streams in four years is M. I. A. 341,003 Streams

I have rounded up the 100 artists on this chart in order of the most streaming.





DETERMINING GROWTH

I want to predict the growth rate in three months.

NEURON NETWORK GRU

I decided to use the GRU model of the neuron network. This model uses data from the past to predict the future. For example, if you predict the number of streams tomorrow, you are using the number of streams today, 1 day ago, and 2 days ago to predict.

Inputs $x_{t-4} \ x_{t-3} \ x_{t-2} \ x_{t-1} \ x_t$ **Outputs** $y_{t+1} \ y_{t+2}$

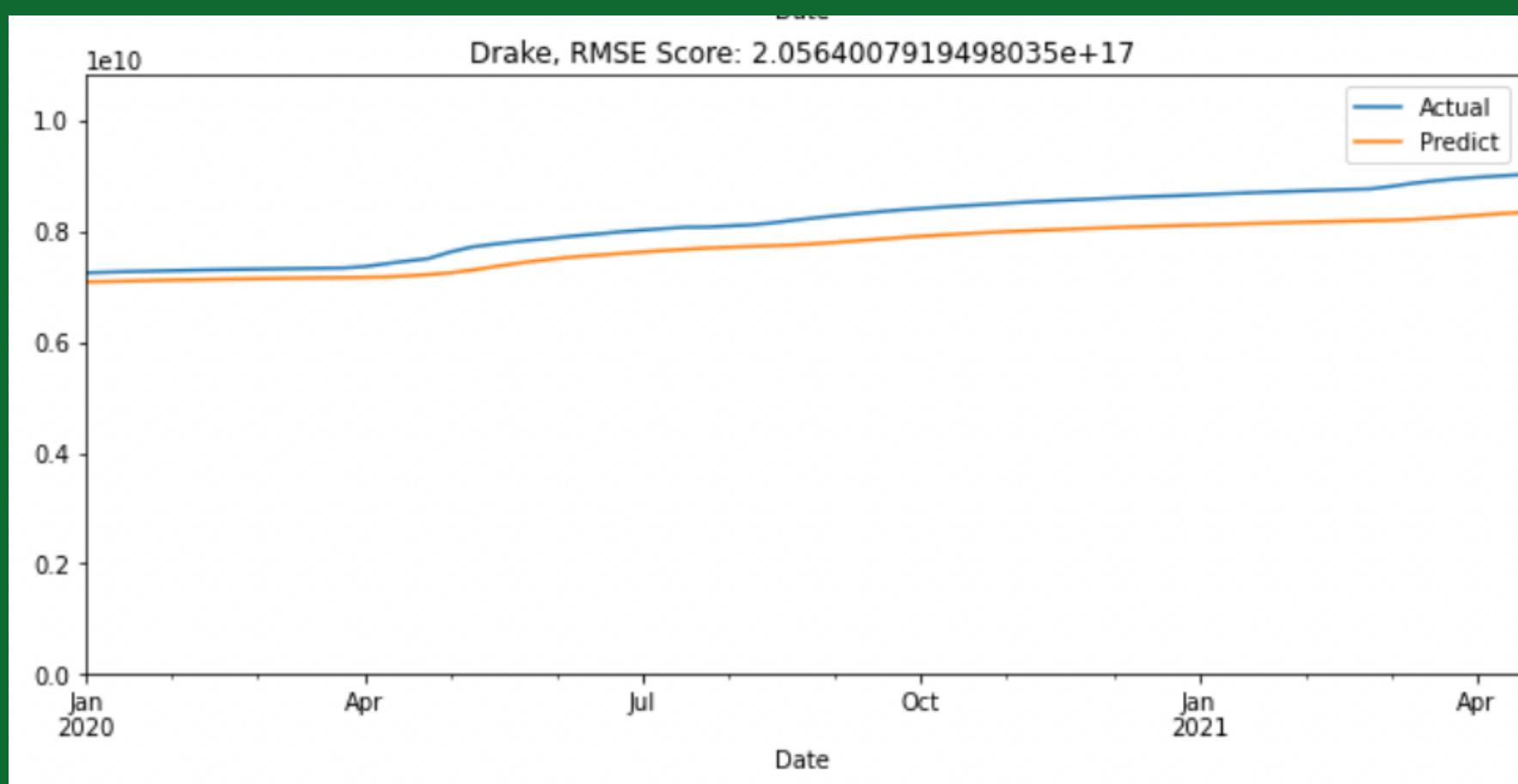
Samples

Each time step has one feature

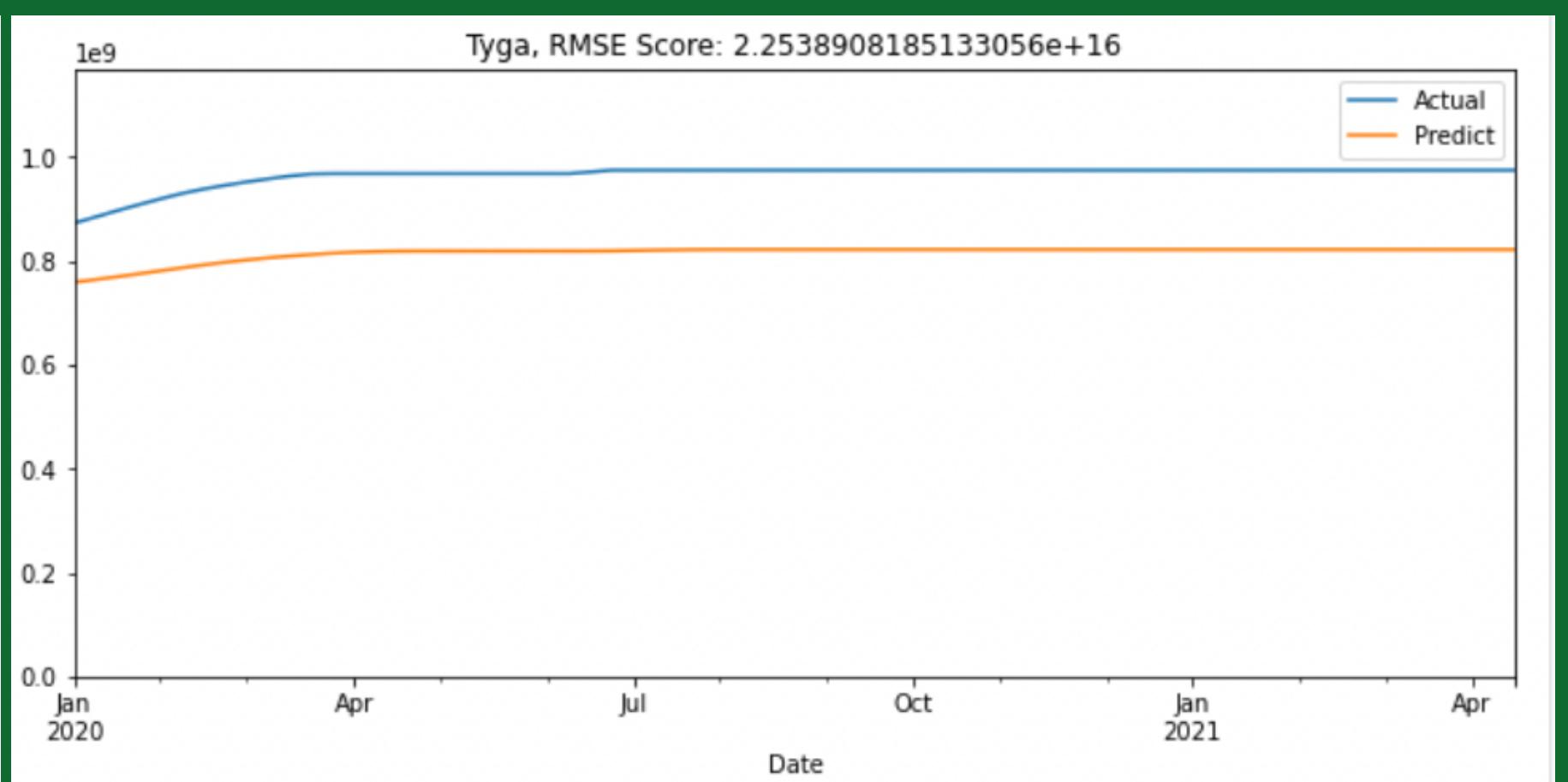
Date	Adj Close
2013-01-02	257.31
2013-01-03	258.48
2013-01-04	259.15
2013-01-07	268.46
2013-01-08	266.38
2013-01-09	266.35
2013-01-10	265.34
2013-01-11	267.94
2013-01-14	272.73
2013-01-15	271.90

3-D array = [# of samples, # of time steps, # of features]

DRAKE



TYGA



DRAKE



Rank: 4th

Streaming since 2017: 9 billions.

After 3 months,
the streaming growth rate is
predicted to be 1.4%.

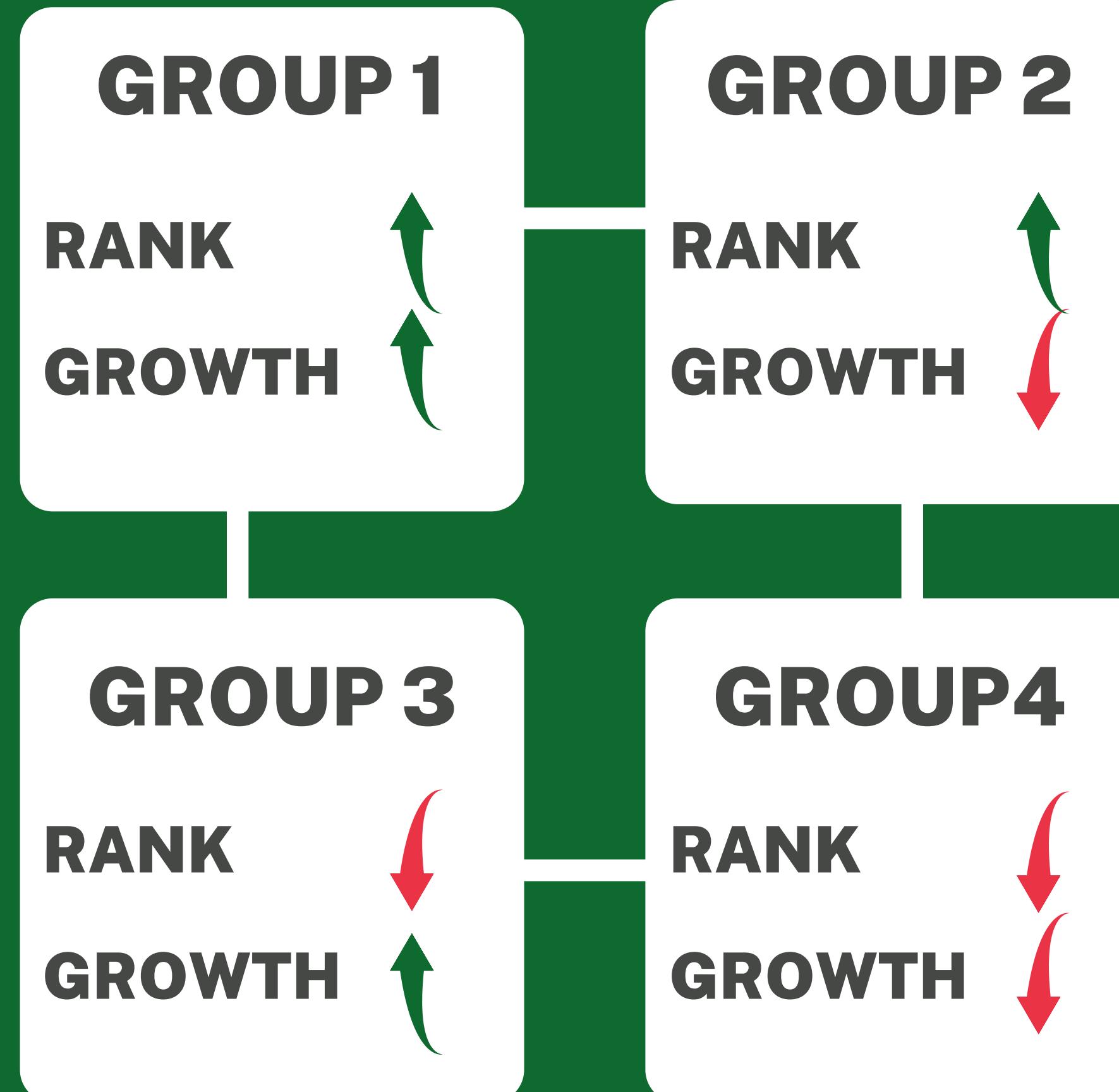
TYGA



Rank: 97th

Streaming since 2017: 974 millions.

After 3 months,
the streaming growth rate is
predicted to be 20.5%.



REPRESENTATION

Three artists representing each group were selected.



BTS



LADY GAGA



POST MALONE



Rank	40.000000
Future Growth	0.390759

Rank	28.000000
Future Growth	0.447333

Rank	1.000000
Future Growth	0.153796

REPRESENTAION

Three artists representing each group were selected.

GROUP 2
RANK
GROWTH



DRAKE



Rank	4.000000
Future Growth	0.014655

MAROON 5



Rank	19.000000
Future Growth	0.071677

CARDI B



Rank	27.000000
Future Growth	0.131144

REPRESENTAION

Three artists representing each group were selected.

GROUP 3

RANK



GROWTH



TYGA



Rank	97.000000
Future Growth	0.205176

BENNY



Rank	79.000000
Future Growth	0.393341

LIL MOSEY



Rank	96.000000
Future Growth	0.275643

REPRESENTAION

Three artists representing each group were selected.

GROUP4

RANK

GROWTH



BRUNO MARS



Rank	52.000000
Future Growth	-0.001709

21 SAVAGE



Rank	69.000000
Future Growth	0.056952

SHAKIRA



Rank	84.000000
Future Growth	-0.013659



THANK YOU!