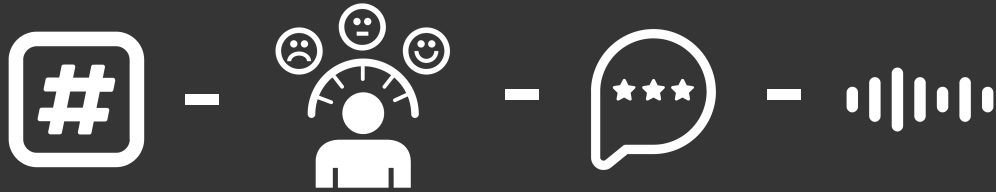

Module 4 Project



Chelsea Power

The fourth industrial revolution is in full effect, and companies, particularly in the **music business**, need to prepare a new set of strategies if they are to adapt and take full advantage of AI's wave of change.

~ Ashley Rose, [Entrepreneur.com](https://www.entrepreneur.com), 2019

Top Music Streaming Services

Target Audience



Problem Definition

Why do we need context-aware music recommender systems?

Record companies are estimated to invest **\$4.5 billion annually worldwide in A&R targeted marketing**



On-demand streams in the US for 2018 hit a record high of **534.6 billion total streams** (up 42% from 2017).



Help fans **find the best music** possible for their specific taste and interest.



Make recommendations smarter because **listeners have limited time** for music consumption.

Project Methodology

Obtain & Scrub

- Clean, reduce and combine three datasets together
- Create an MVP dataset

Model

- Train/Test split
- Fit the model
- Confusion matrix
- Classification report
- Cross validation
- Neural network

Weeks 1-3

Week 4

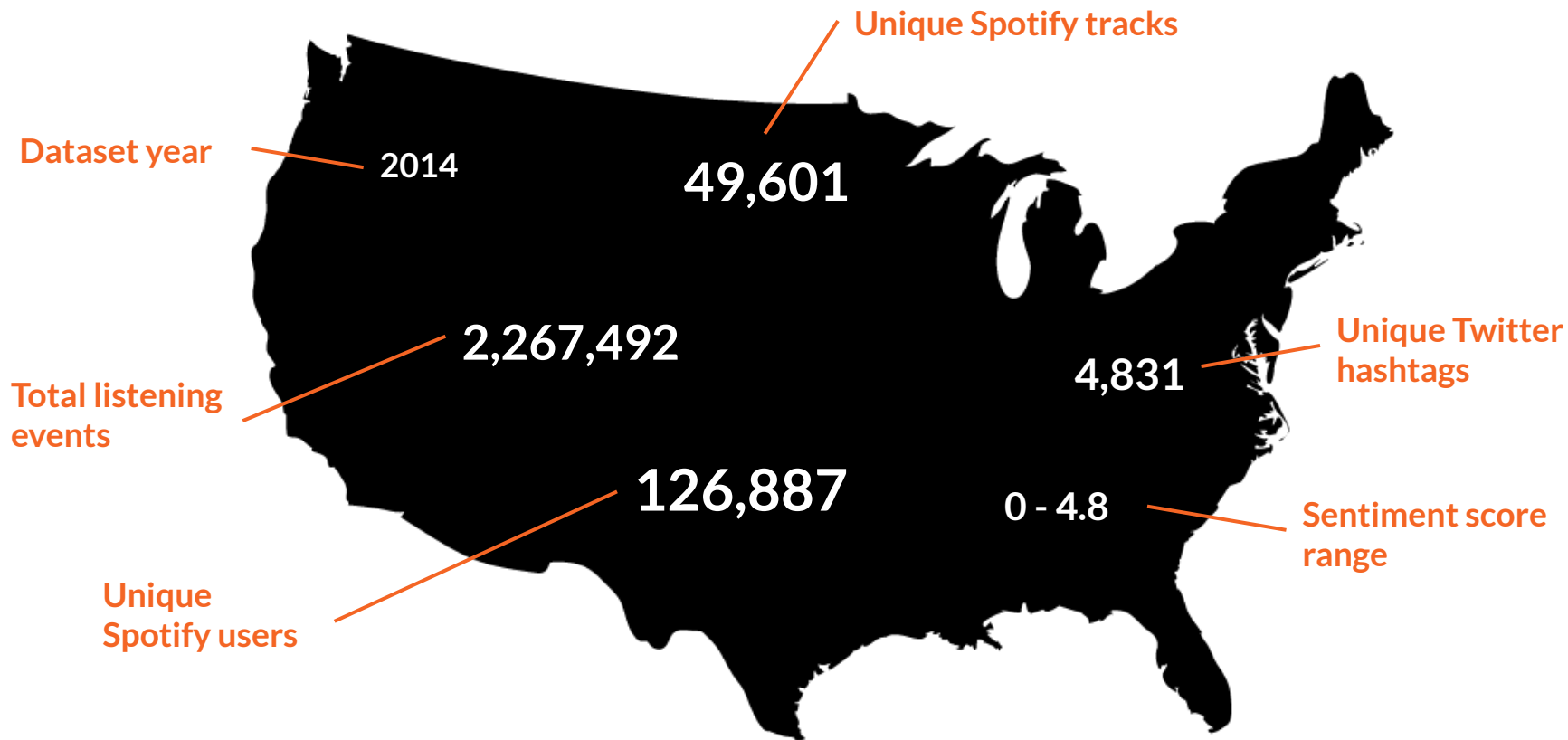
Explore

- Check for multicollinearity
- Logistic regression
- Upsample data

Interpret

Sequential neural networks are great at predicting context-aware music recommender systems...

About the Data



Top Hashtags

By Sentiment Score

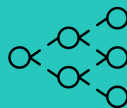
1	thriller	4.8
2	harmonicalove	4.7
3	well	3.9
4	richardmarx	3.6
5	richmond	3.6
6	loversrock	3.4
7	cozypowell	3.4
8	impressionnance	3.3
9	preciousgrace	3.2
10	greatsongforagreatday	3.2

By Count/Frequency

1	nowplaying	4,870,436
2	kiss92	56,437
3	postpunk	25,299
4	punk	24,730
5	deathrock	24,699
6	urbantraxxradio	23,867
7	tophits	22,836
8	craveradio	9,735
9	rock	9,483
10	stonerrock	42,97

Based on **#hashtag** and **time zone** we can use deep learning to predict the **next Spotify song** you want to listen to!

The model predicts with **99%** accuracy.



Recommendations

Even though the neural network predicts the next song in 81 seconds with 99% accuracy, I recommend using a **supervised model** for on-demand, music streaming service that can make a prediction in **2 seconds with 99% accuracy**.

Next Steps / Additional Research

- Use current Spotify and Twitter datasets (from 2018+) that includes **likes/dislikes** of songs to determine how additional user context-aware information influences the deep learning, classification model.
- Under a different use case (using current Spotify & Twitter datasets) build a deep learning, classification model based on recommending **new music** to a user based on their mood, likes/dislikes, and previous listening history.

THANK YOU

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