

VALENCE SPACE

An Exploration of the Sound of Music over Time

Chris Lowen

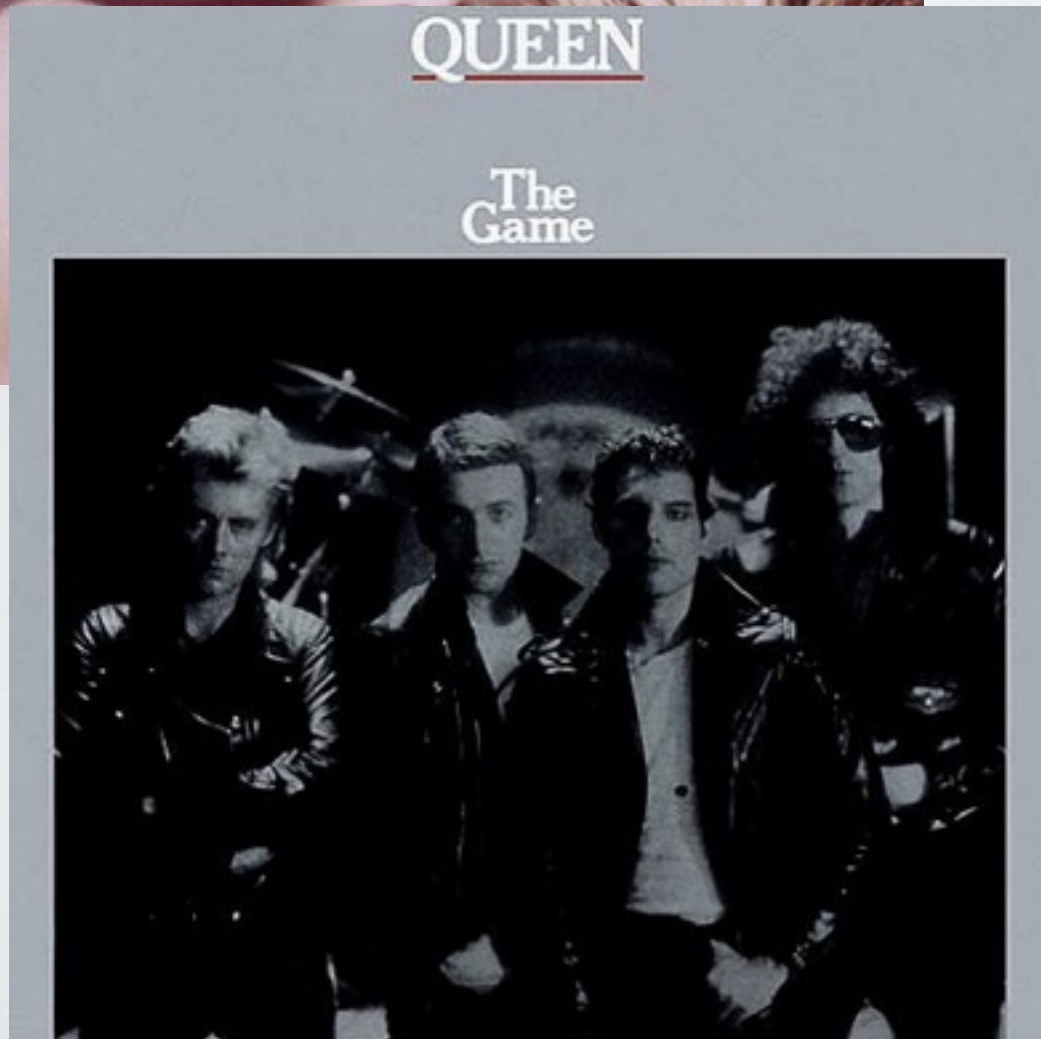


60s

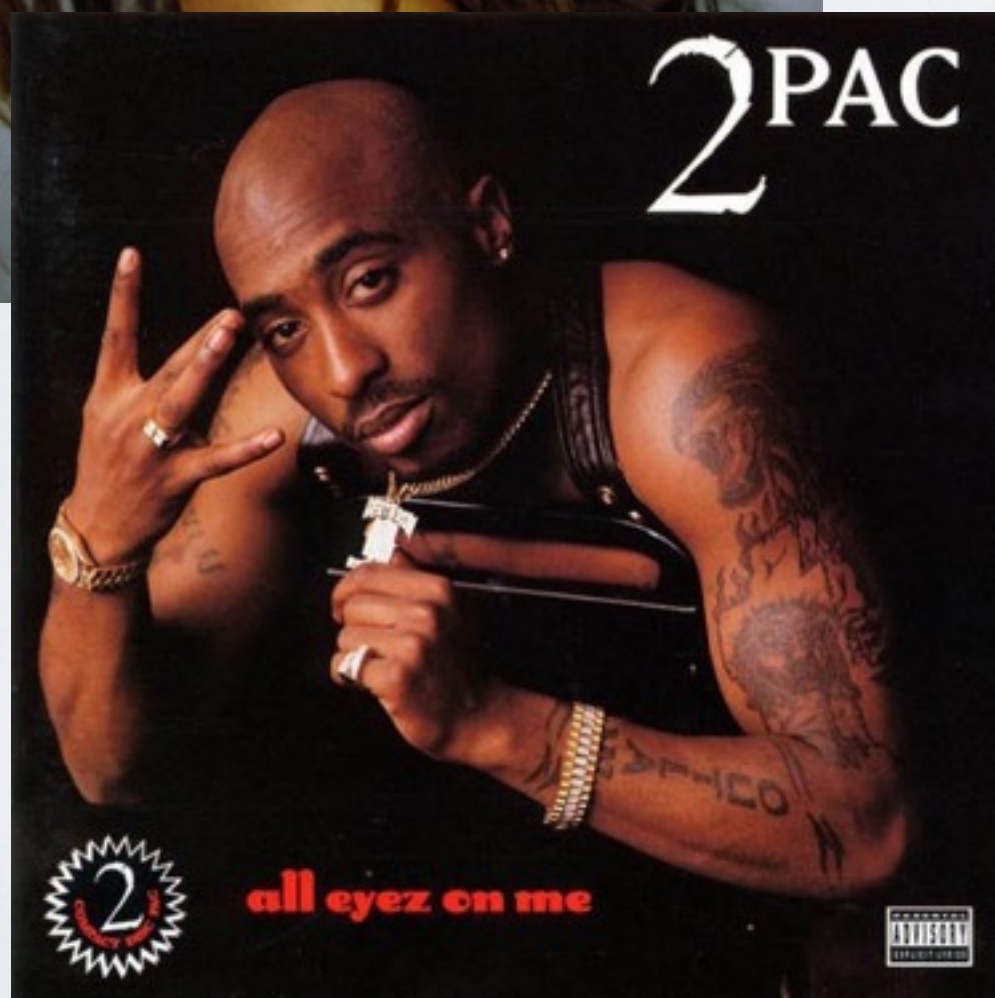
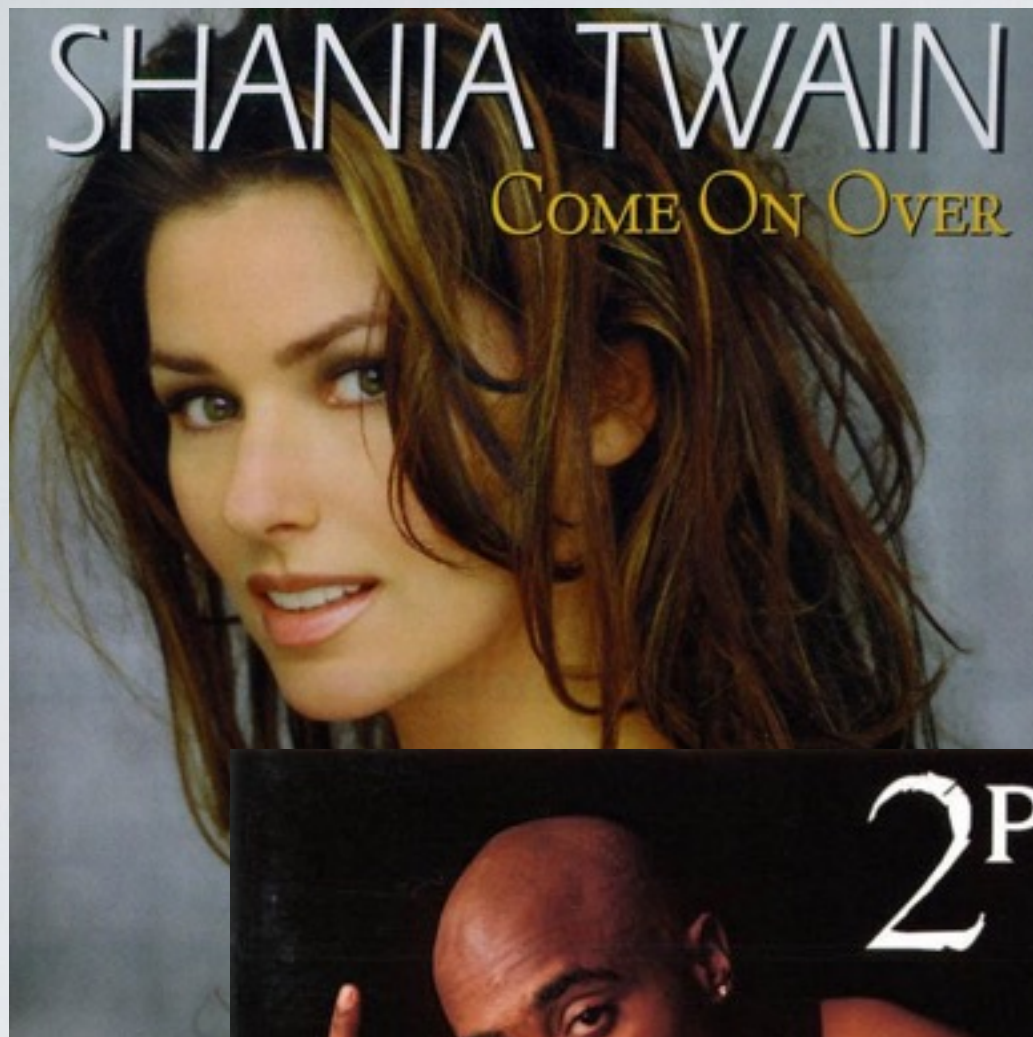




80s



90s



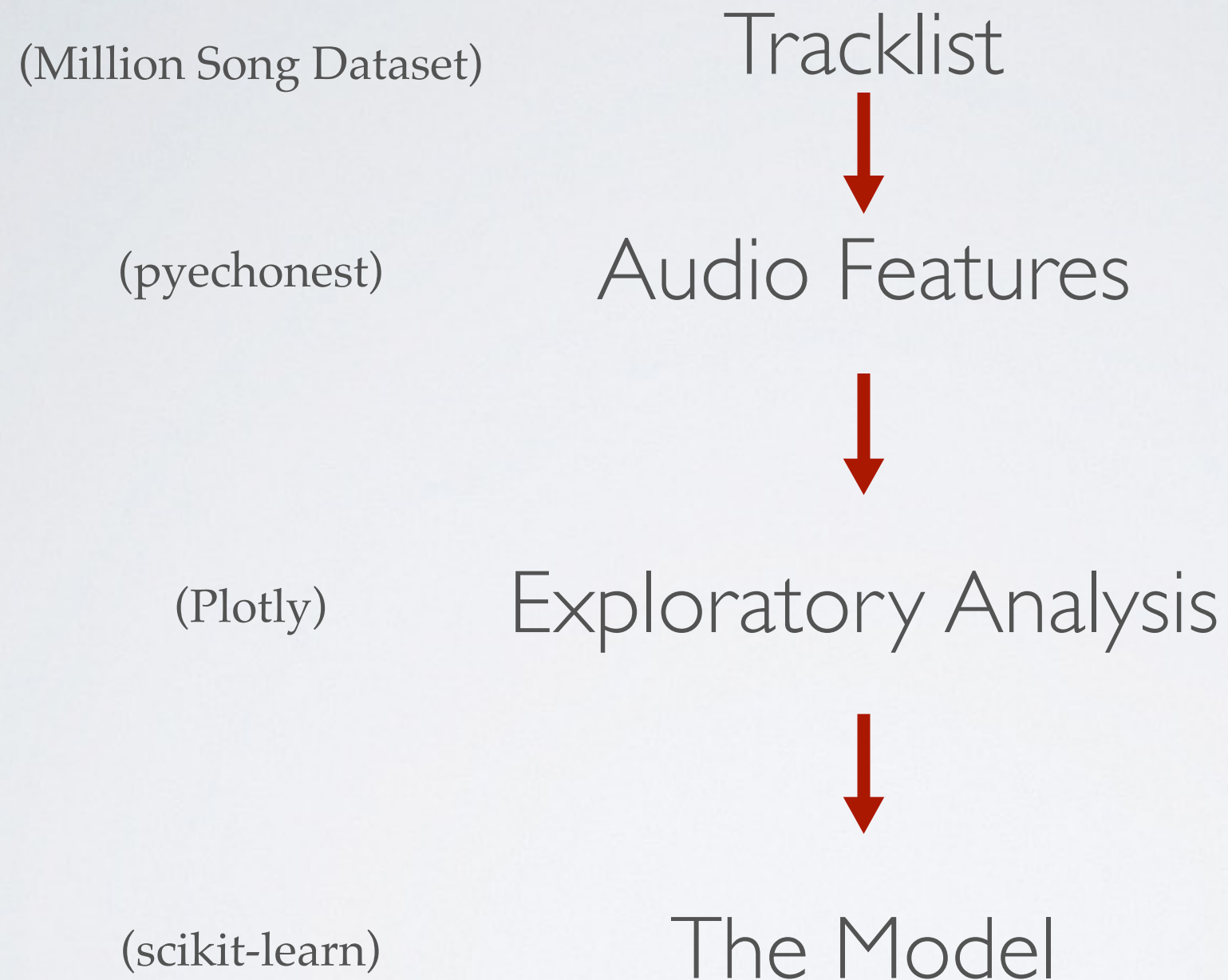
MOTIVATION

To determine what decade a piece of *new* music sounds like

PROBLEM

To create a model that classifies songs by decade

PIPELINE OVERVIEW



THE DATA

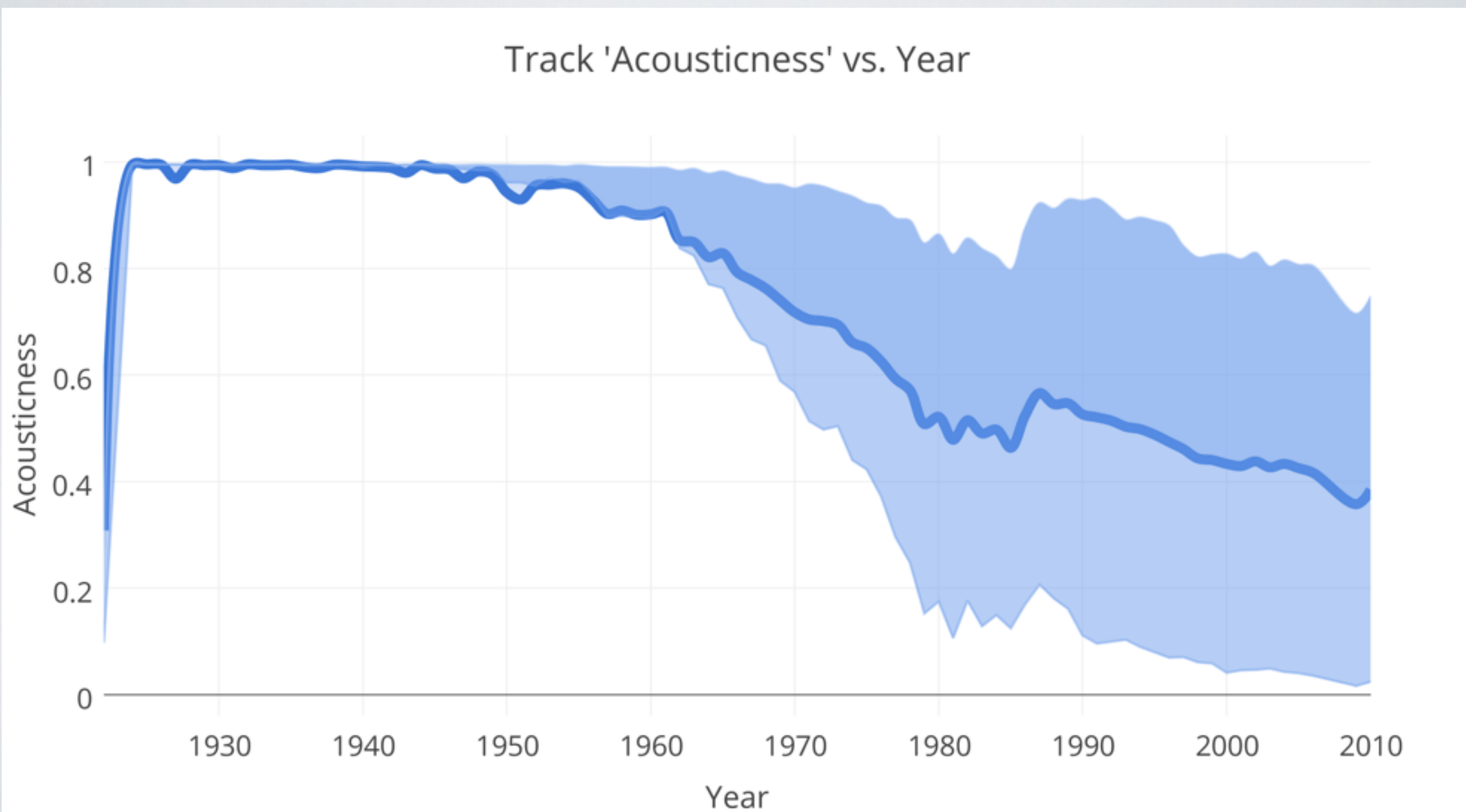
- 1 million audio tracks, published in 2011
- 13 Audio Features from Echo Nest - ('loudness', 'danceability', tempo, key, etc.)
- ~ 270,000 tracks ranging from 1922 - 2010



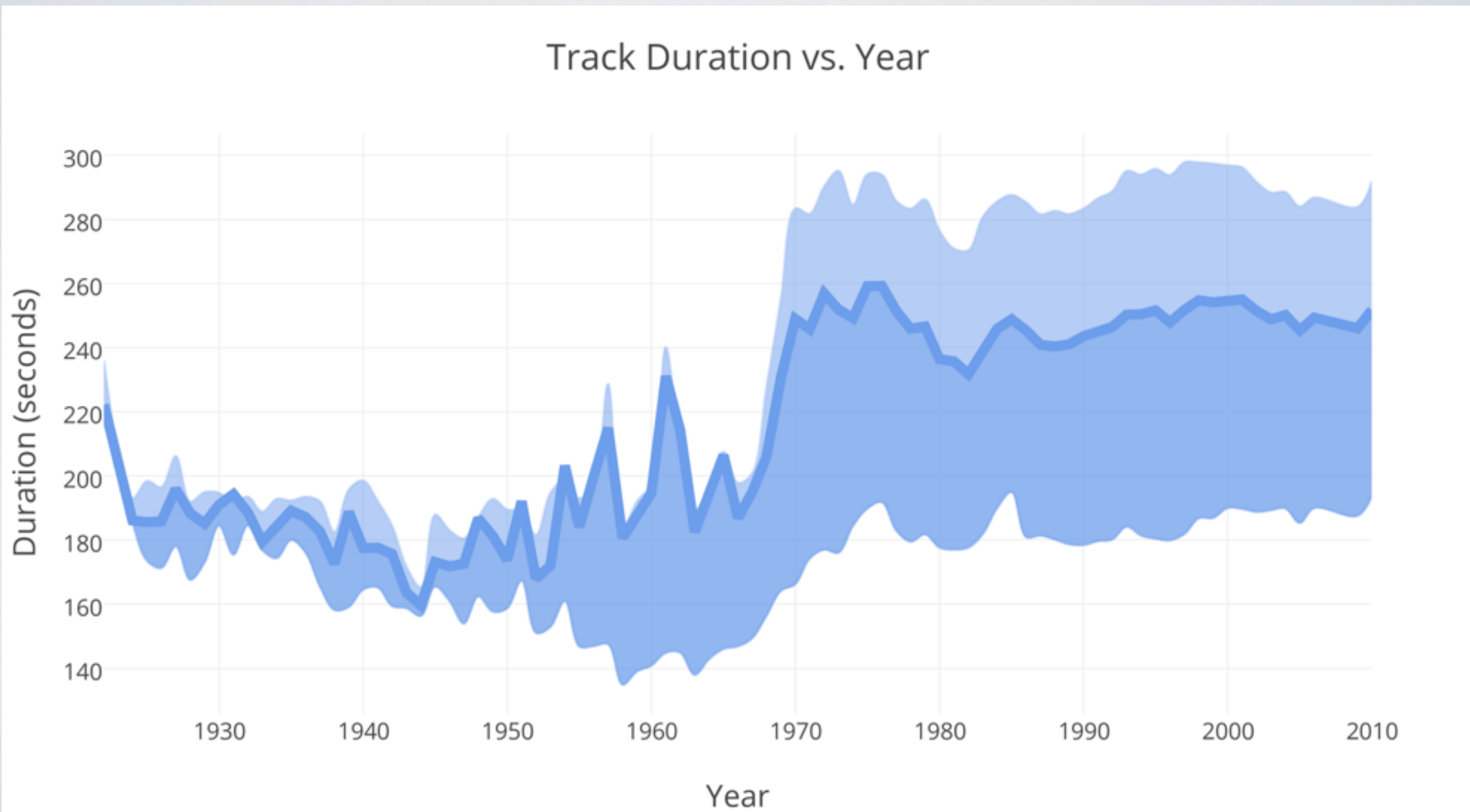
EXPLORATORY DATA ANALYSIS



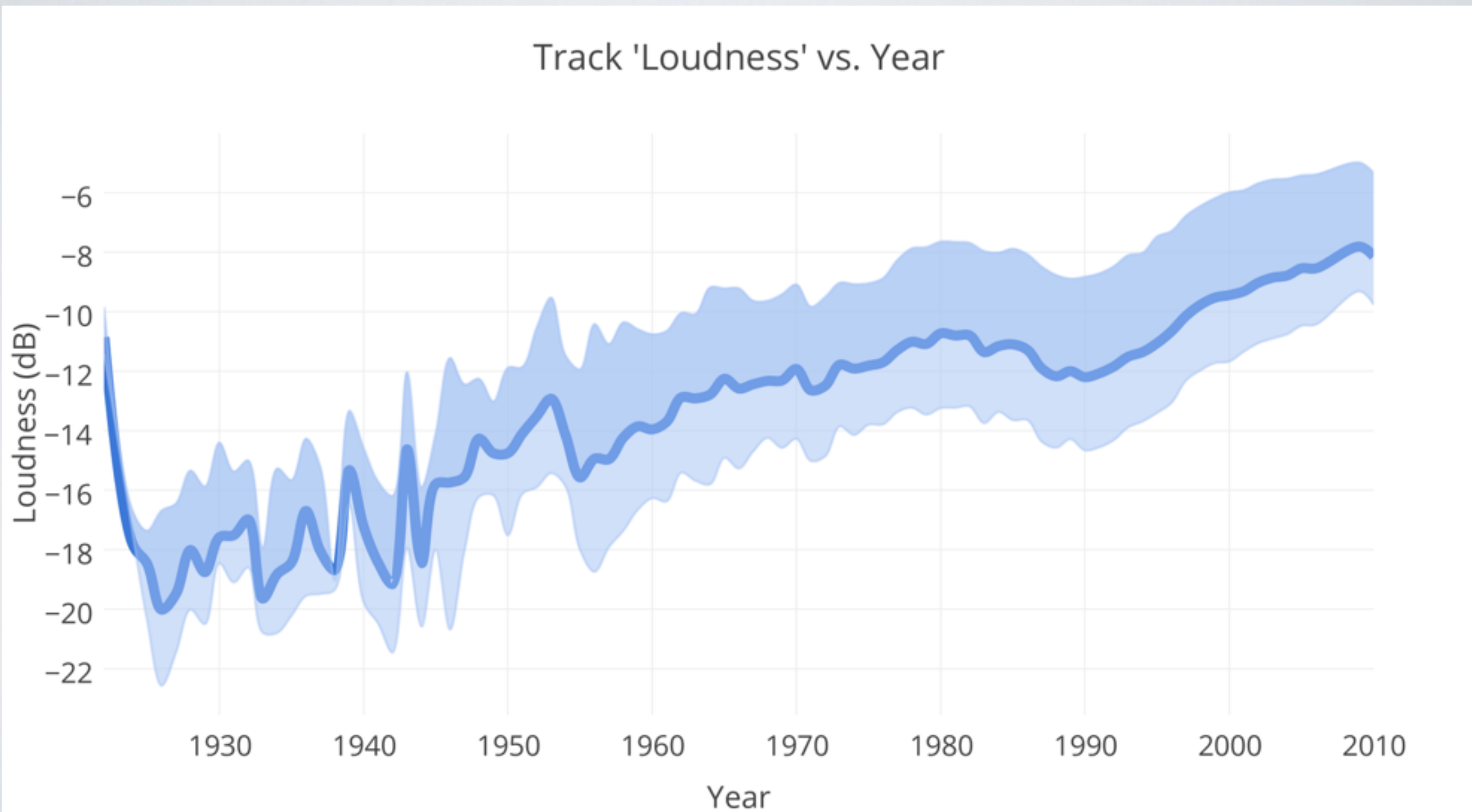
ACOUSTICNESS



DURATION



LOUDNESS



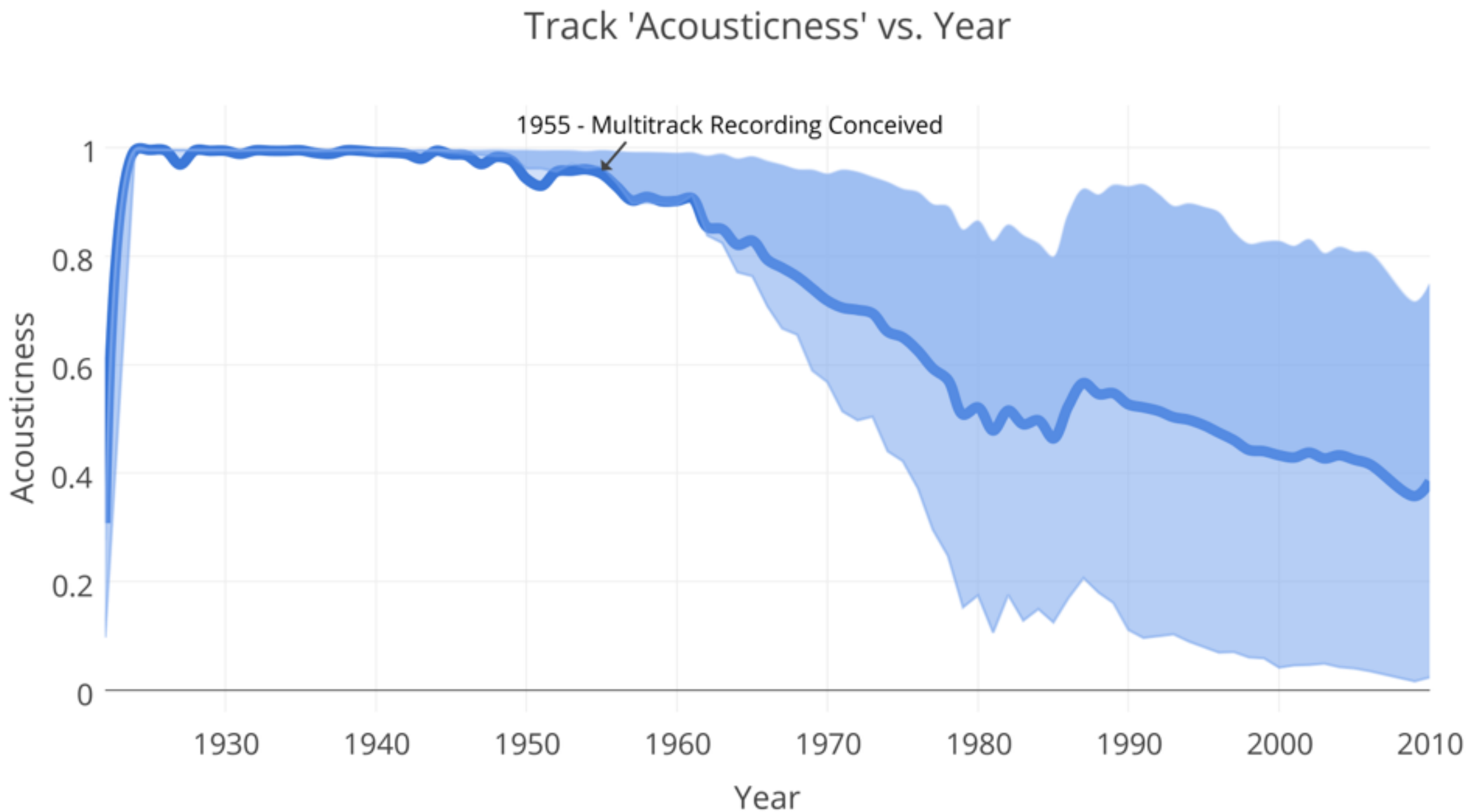
DATA ISSUES

Extremely uneven class sizes -

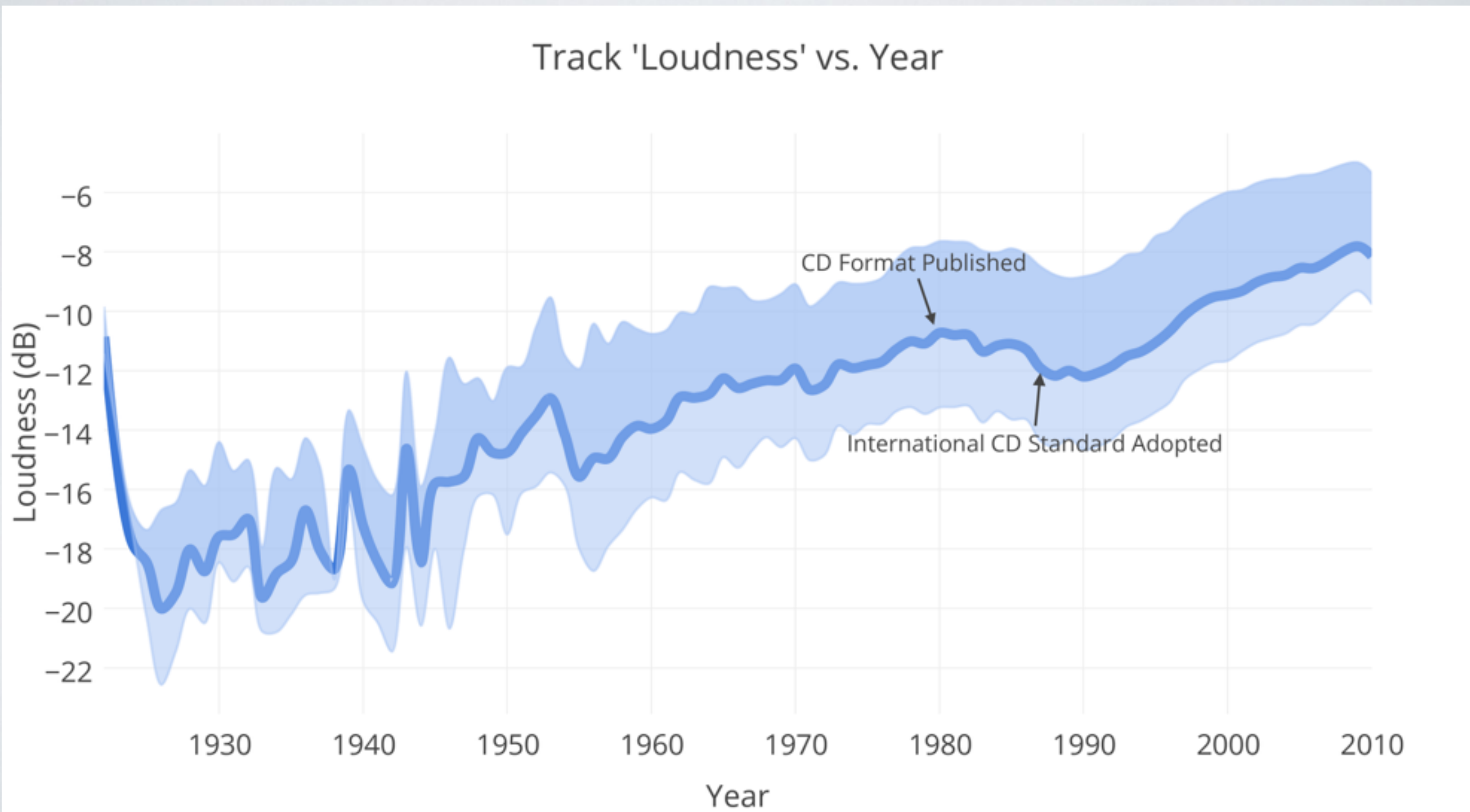
~3,000 samples from before 1960

~136,000 from between 2000 and 2010!

ACOUSTICNESS



LOUDNESS



-FINAL MODEL-

Random Forest

pre-1960s + 5 decades

(6 classes ~ 16.7% accuracy by chance)

28.7 % Accurate by Decade

53.7% Overall Accuracy

PREDICTIONS

Artist	Track	Release Year	Prediction
The Beach Boys	Lonely Sea	1963	1960s
Journey	Don't Stop Believing	1981	1980s

PREDICTIONS

Artist	Track	Year	Sounds Like	Prediction
"Pigmeat" Markham	Here Comes the Judge	1968	Rap	
Violent Femmes	Blister In The Sun	1983	90s Alt Rock	
Daft Punk	Get Lucky	2013	70s/80s Disco Funk	

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INSIGHTS AND ISSUES

Much of the model's success is attributed to recording trends and technology

Classifying genre *before* year may increase accuracy

QUESTIONS?

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