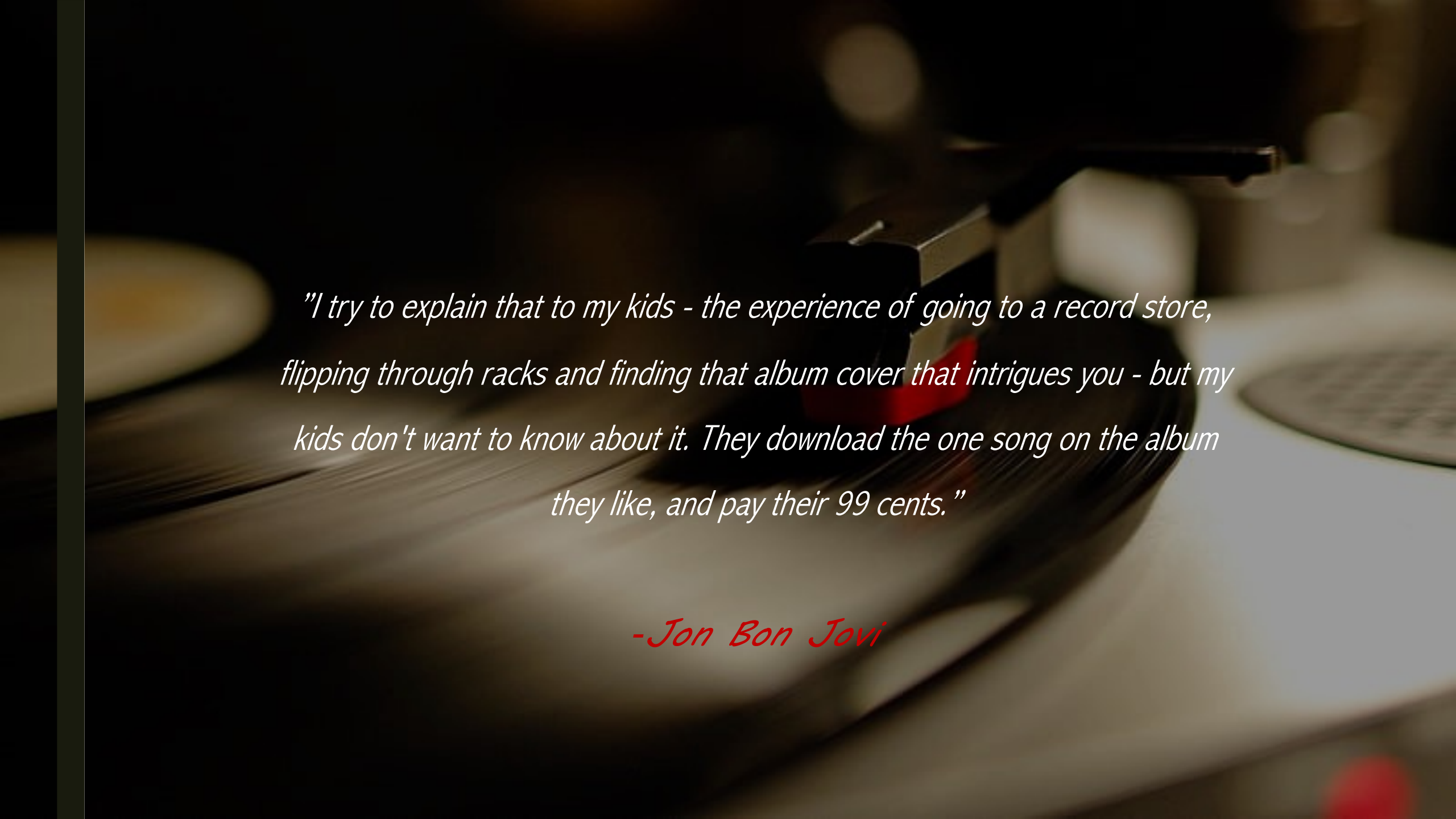# PREDICTING SONG POPULARITY ON SPOTIFY USING ALBUM ARTWORK

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OCTOBER 2022

FOR VISION RECORDS

"I try to explain that to my kids - the experience of going to a record store, flipping through racks and finding that album cover that intrigues you - but my kids don't want to know about it. They download the one song on the album they like, and pay their 99 cents."
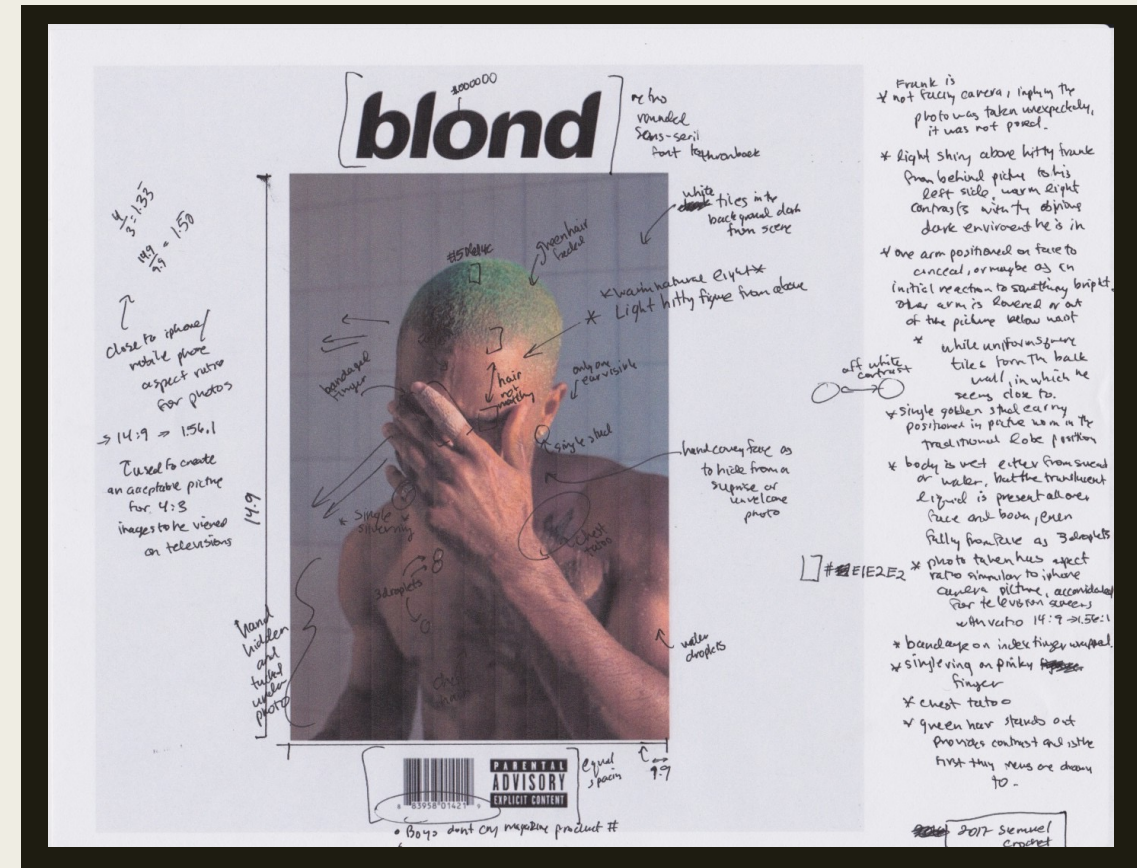
-Jon Bon Jovi

BUSINESS OBJECTIVE

- New record label Vision preparing to upload artists' music to **Spotify**

- Determine how resources should be allocated towards album artwork creation

- Understand album artwork styles that **resonate with Spotify subscribers**
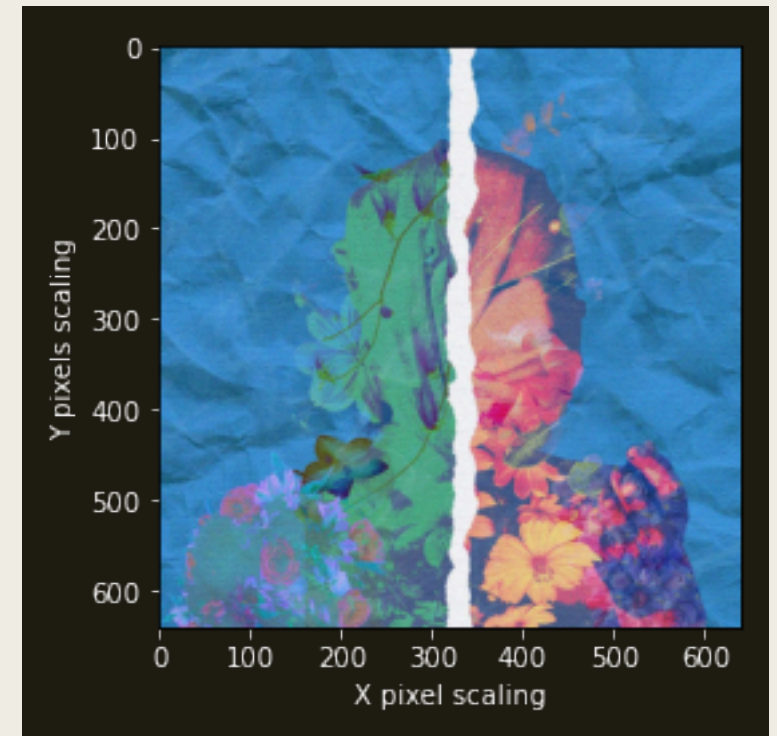
OUR SOLUTION

- Analyze songs from "Fresh Finds" playlists on Spotify
  - Playlist highlights artists **on independent labels**
  - Use album artwork and **popularity index** of each track

- Determine if album art plays a role in track success, and which artwork styles
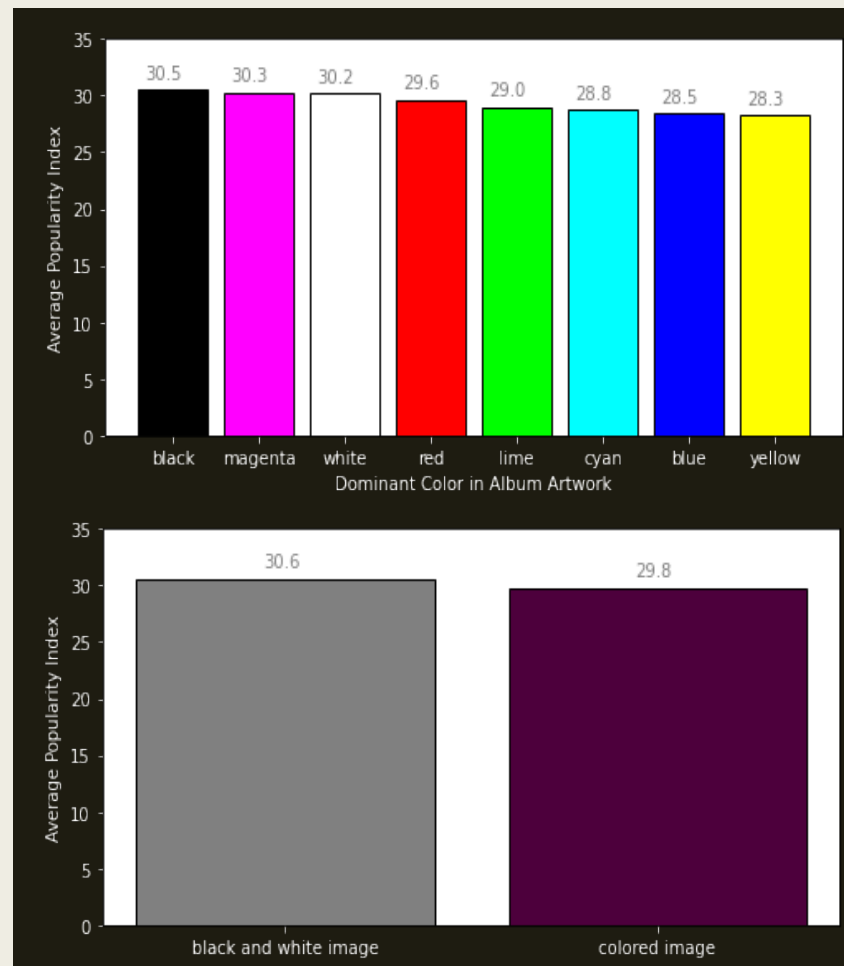
DATA UNDERSTANDING

- **Popularity index** is a calculation between 0-100, with **100 indicating popular**
  - Calculated by total number of plays, and play recency

- Album artwork reformatted to be "viewed" by algorithm to **predict popularity**

  - An image is matrix of pixel values.
  - Each pixel is represented as the height and width of a matrix
  - Depth of matrix represents the Red, Green, Blue values
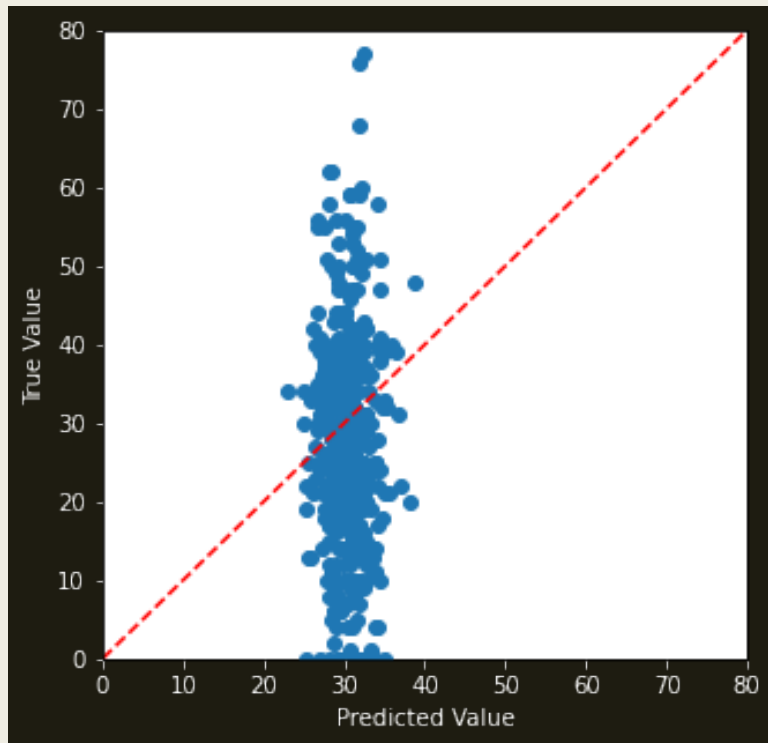
Album artwork example from Spotify

COLOR OF ALBUM ARTWORK DOES NOT INDICATE SIGNIFICANT DIFFERENCES IN POPULARITY

- Artwork **with black as a dominant color** have **a slightly higher** index than other colors on average

- **Black-and-white images** have **a slightly higher** average index than colored images
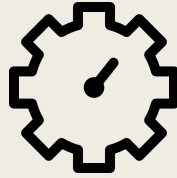
FINAL MODEL SUGGESTS ALBUM ARTWORK DOES NOT PLAY A SIGNIFICANT ROLE IN SPOTIFY POPULARITY

Scatterplot of True vs. Predicted Values

- Model was within a 5-point threshold of predicting popularity **only 25%** of the time.

- Generated a **Root Mean Squared Error of 12**

- Model generated a **Coefficient of Determination value of 0**
  - artwork explains the popularity index about **as efficiently as averaging the popularity index**

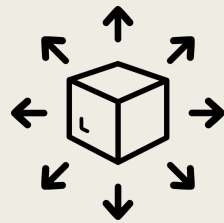Data source: https://developer.spotify.com/

CONCLUSIONS AND NEXT STEPS

Consider **allocating resources away from album art creation**, as artwork style doesn't seem to affect popularity on Spotify

Commission a study on album and/or song name to **understand naming effect on Spotify popularity**

If artwork context is crucial, consider **other means of distribution outside of Spotify** as users don't seem engaged with it

Thank you

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