

How Spotify Uses Data Science

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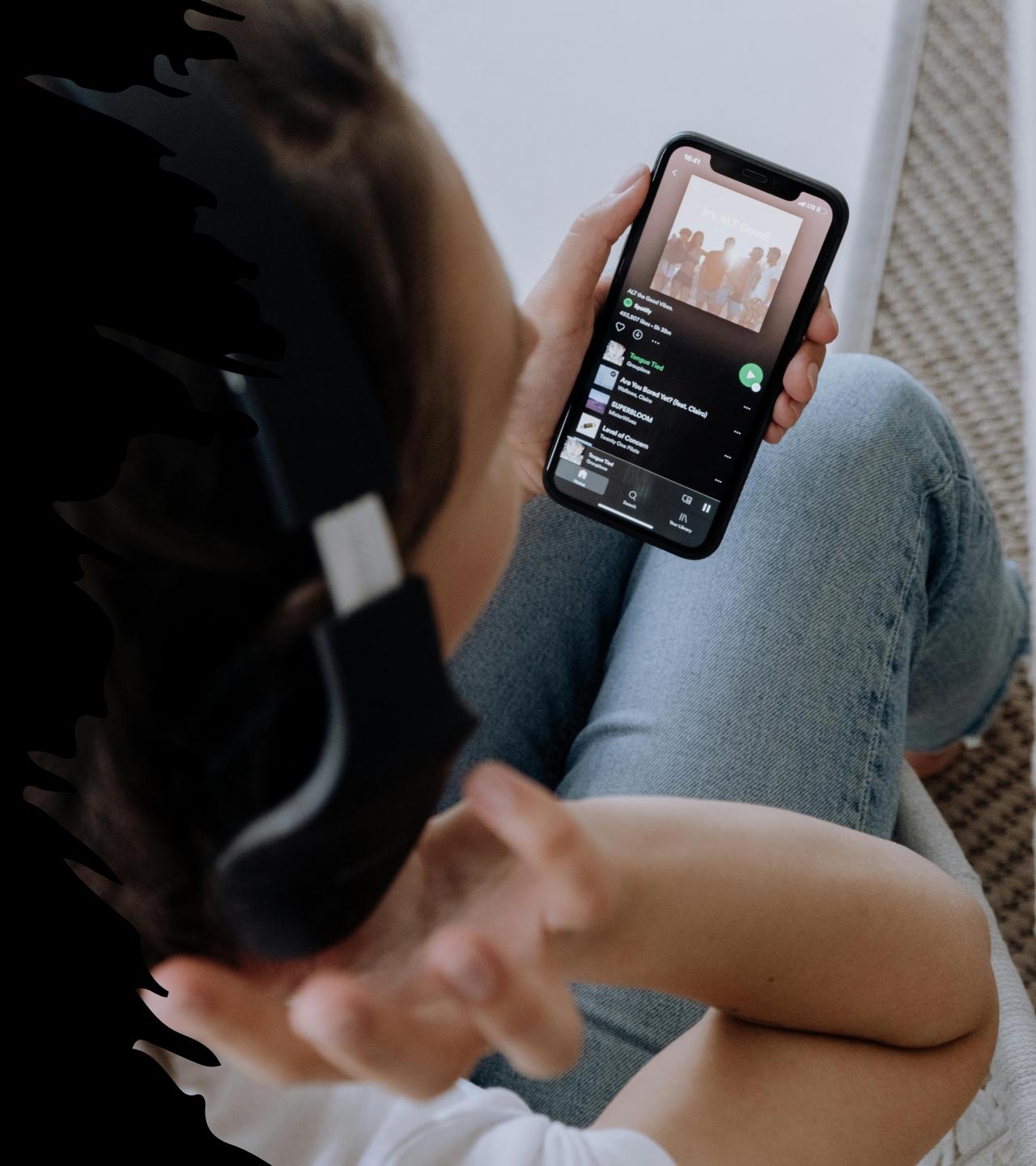


Outline

- About Spotify
- How Spotify collects and analyzes data
 - Machine Learning
 - Natural language Processing
 - Convolutional Neural Networks
 - Other
- Data Visualizations
- Ethical Concerns
- Citations

About Spotify :

- Launched in 2008
- Includes songs, podcasts, and audiobooks
- 713 million users
- 281 million subscribers
- Spotify Wrapped





Machine Learning

- Analyzing user behavior to group users together
- Recommends songs based off what similar users are listening to
- Predict what statistics are most interesting to user and what they will want to listen to in future
- Data cleaning and aggregation
- Trend forecasting

Natural Language Processing

- Analyzing how artists and songs are described
- Group similar artists based off genre to build playlists around them

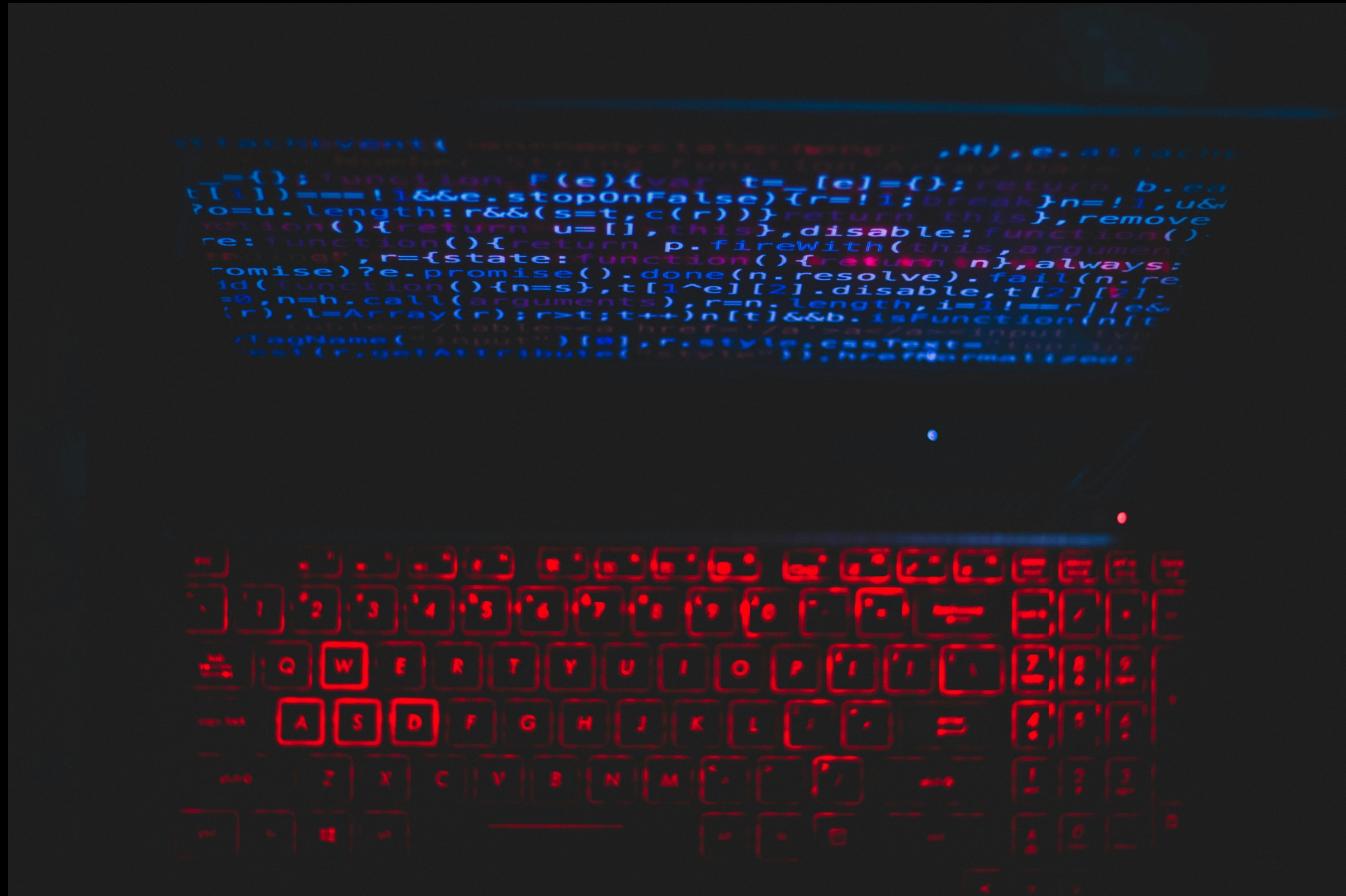
Convolutional Neural Networks

- Analyzes raw audio data to detect musical elements
- Classify songs based on music type

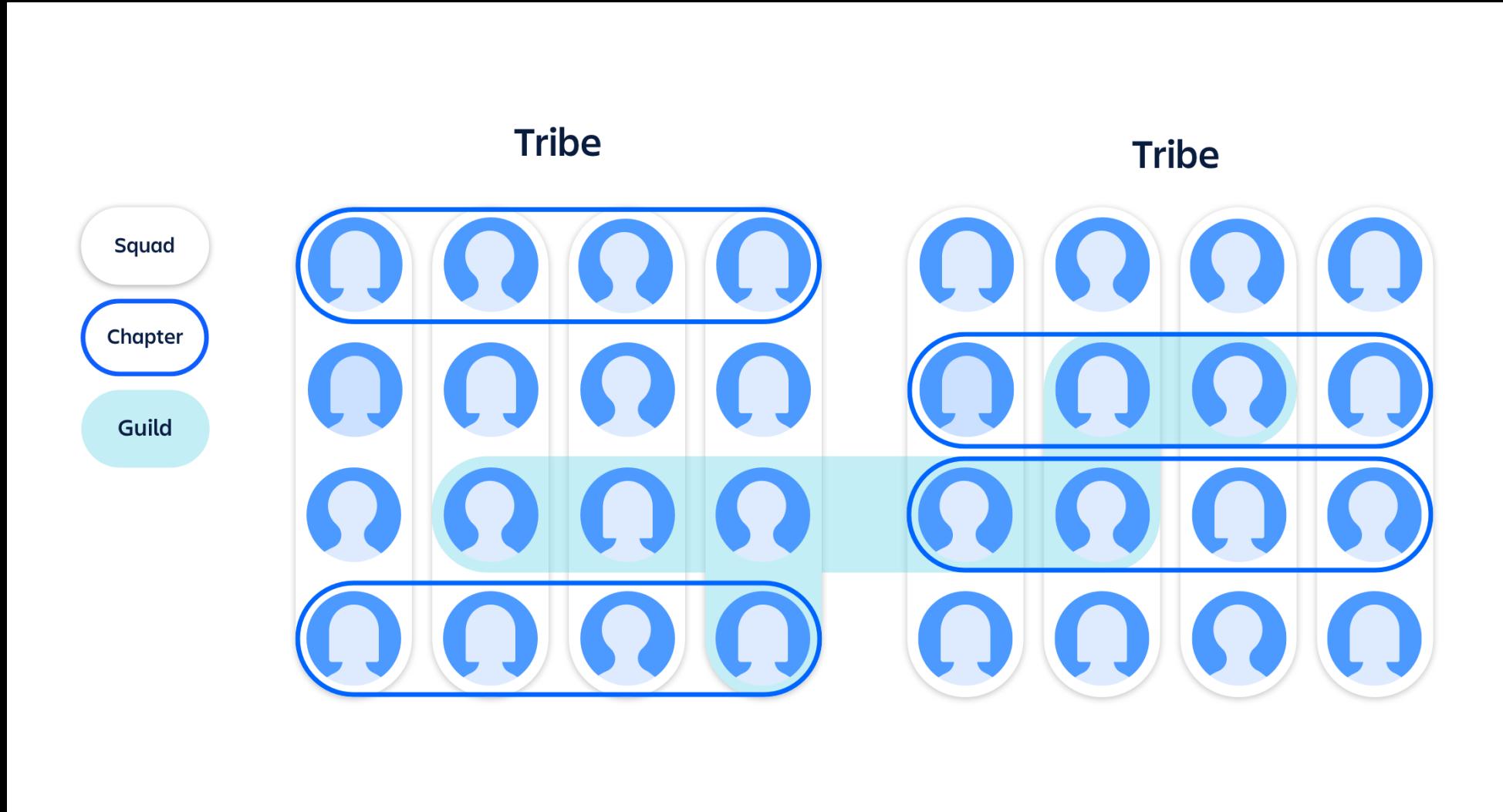


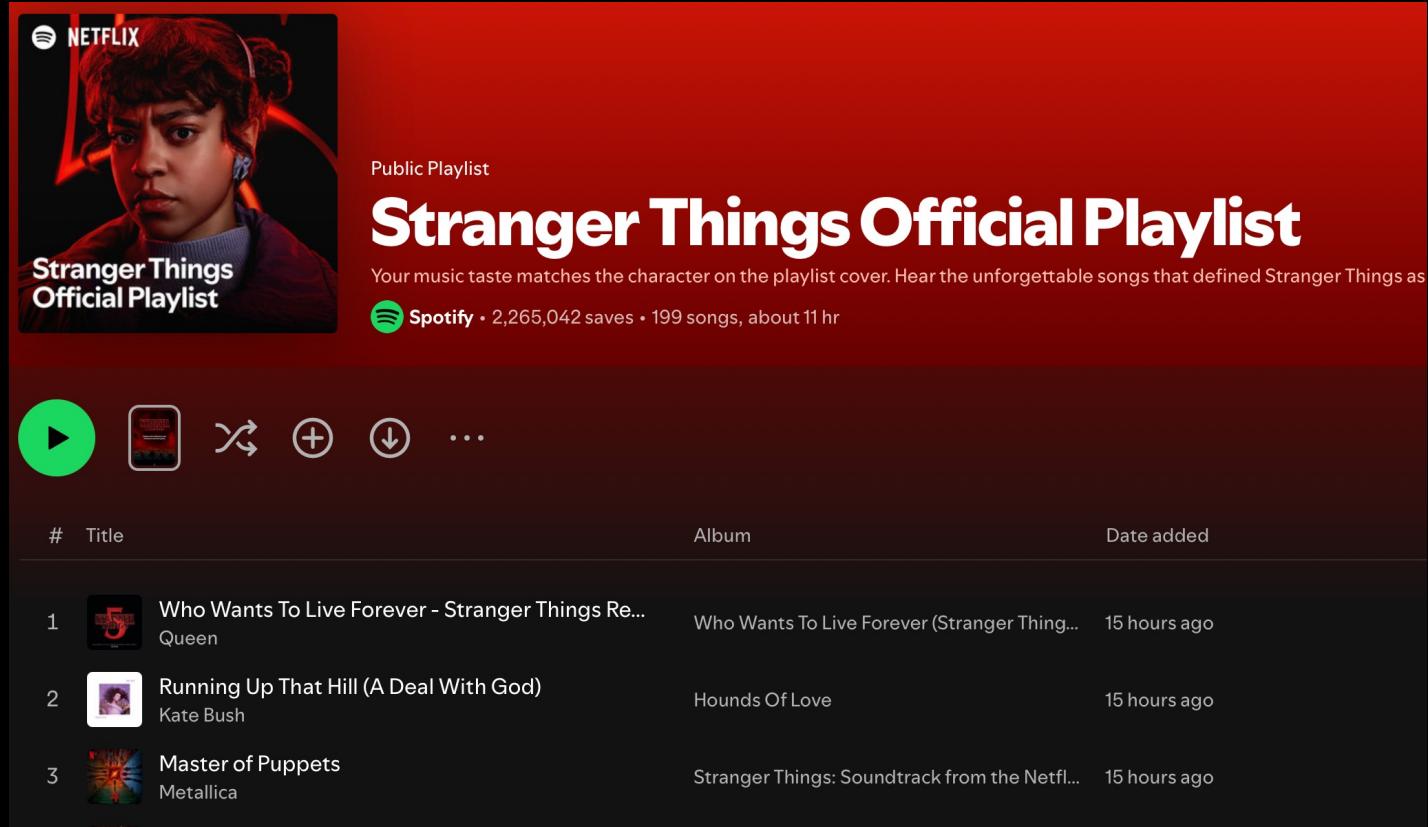
Other Ways of Collection

- Bayesian Additive Regression Trees
 - Provides music recommendations in real time
 - Only uses songs that are listened to for more than 30 seconds
- AI
 - Patented
 - Uses voice data to determine user's personality and demographics
 - Controversial
- The Spotify Model



The Spotify Model





Data Visualizations

- Spotify Wrapped
- Listening Stats new feature
- Collaborations with other media
- Made to post on social media

Ethics

- Privacy and data protections
 - Listening to users
 - Assuming data about users through voice recognition
- Usage of AI
 - Creator Technology Research Lab for artists
 - AI Playlist
 - AI art for playlist covers



Citations:

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