Data Science @GA

Final Project Ideas

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Idea #1: Classify songs by musical key

Problem statement:

- In classical and pop music, most songs have keys/scales, which are essential for creating chords. However, it is hard for an average person to tell the key/scale of a song without background in music theory.

Hypothesis:

- By analyzing music audio tracks, we will be able to predict the key/scale of a song.

Data:

- *Target variable = musical key/scale*
- *Predictors: processed music audio tracks in the format of sound waves (i.e. A = 440 hz) for the purpose of key detection*

Idea #2: Predict users' next stay point

Problem statement:

- In the world of mobile advertising, it is crucial to understand where and when a target consumer is likely to be in order to serve the right messaging and maximize ad effectiveness.

Hypothesis:

- Based on a consumer's historical movement behaviors, we will be able to predict the next stay point of that consumer.

Data:

- *Target variable = stay point location*
- *Predictors: location history of consumers; each record contains a unique identifier of consumer, a lat/long pair, and a timestamp.*

Idea #3: Classify users based on location history

Problem statement:

- For brands with brick and mortar locations, understanding who their customers are and what other points of interest they share helps to inform future marketing initiatives.

Hypothesis:

- Based on where a consumer has been prior to visiting a store location, we will be able to classify them into different audience segments by POIs.

Data:

- *Target variable = audience segment*
- *Predictors: location history of consumers; each record contains a unique identifier of consumer, a lat/long pair, and a timestamp.*