

# Regressão Linear

## Prática 09: Recomendação

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# Olá!



## **Curso: Bacharelado em Sistema de Informação**

Disciplina: Sistemas Inteligentes

- ▶ **Estudo de caso: Recomendação de Música**

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(Dúvidas e sugestões serão bem-vindas =D)

# *Prática*

”

# Passo 1: Importar graphlab e carregar os dados

```
import graphlab
pessoas = graphlab.SFrame('people_wiki.gl/')
```

# Passo 1: visualizando os dados

```
musicas.head()
```

user_id	song_id	listen_count	title	artist
b80344d063b5ccb3212f76538 f3d9e43d87dca9e ...	SOAKIMP12A8C130995	1	The Cove	Jack Johnson
b80344d063b5ccb3212f76538 f3d9e43d87dca9e ...	SOBBMDR12A8C13253B	2	Entre Dos Aguas	Paco De Lucia
b80344d063b5ccb3212f76538 f3d9e43d87dca9e ...	SOBXHDL12A81C204C0	1	Stronger	Kanye West
b80344d063b5ccb3212f76538 f3d9e43d87dca9e ...	SOBYHAJ12A6701BF1D	1	Constellations	Jack Johnson
b80344d063b5ccb3212f76538 f3d9e43d87dca9e ...	SODACBL12A8C13C273	1	Learn To Fly	Foo Fighters
b80344d063b5ccb3212f76538 f3d9e43d87dca9e ...	SODDNQT12A6D4F5F7E	5	Apuesta Por El Rock 'N' Roll ...	Héroes del Silencio
b80344d063b5ccb3212f76538 f3d9e43d87dca9e ...	SODXRTY12AB0180F3B	1	Paper Gangsta	Lady GaGa
b80344d063b5ccb3212f76538 f3d9e43d87dca9e ...	SOFGUAY12AB017B0A8	1	Stacked Actors	Foo Fighters

song
The Cove - Jack Johnson
Entre Dos Aguas - Paco De Lucia ...
Stronger - Kanye West
Constellations - Jack Johnson ...
Learn To Fly - Foo Fighters ...
Apuesta Por El Rock 'N' Roll - Héroes del ...
Paper Gangsta - Lady GaGa
Stacked Actors - Foo Fighters ...
Sehr kosmisch - Harmonia

# Passo 1: quantidade de dados

```
musicas["song"].show()
```

```
len(musicas)
```

```
1116609
```

```
users = musicas['user_id'].unique()
```

```
len(users)
```

```
66346
```

[illegible]

# Passo 3: fazendo previsões

```
modelo_popularidade.recommend(users=[users[0]])
```

user_id	song	score	rank
c66c10a9567f0d82f31441a9 fd5063e5cd9dfe8 ...	Sehr kosmisch - Harmonia	4754.0	1
c66c10a9567f0d82f31441a9 fd5063e5cd9dfe8 ...	Undo - Björk	4227.0	2
c66c10a9567f0d82f31441a9 fd5063e5cd9dfe8 ...	You're The One - Dwight Yoakam ...	3781.0	3
c66c10a9567f0d82f31441a9 fd5063e5cd9dfe8 ...	Dog Days Are Over (Radio Edit) - Florence + The ...	3633.0	4
c66c10a9567f0d82f31441a9 fd5063e5cd9dfe8 ...	Revelry - Kings Of Leon	3527.0	5
c66c10a9567f0d82f31441a9 fd5063e5cd9dfe8 ...	Horn Concerto No. 4 in E flat K495: II. Romance ...	3161.0	6
c66c10a9567f0d82f31441a9 fd5063e5cd9dfe8 ...	Secrets - OneRepublic	3148.0	7
c66c10a9567f0d82f31441a9 fd5063e5cd9dfe8 ...	Fireflies - Charttraxx Karaoke ...	2532.0	8
c66c10a9567f0d82f31441a9 fd5063e5cd9dfe8 ...	Tive Sim - Cartola	2521.0	9
c66c10a9567f0d82f31441a9 fd5063e5cd9dfe8 ...	Drop The World - Lil Wayne / Eminem ...	2053.0	10



# Passo 3: fazendo predições

```
modelo_popularidade.recommend(users=[users[1]])
```

user_id	song	score	rank
279292bb36dbfc7f505e36ebf 038c81eb1d1d63e ...	Sehr kosmisch - Harmonia	4754.0	1
279292bb36dbfc7f505e36ebf 038c81eb1d1d63e ...	Undo - Björk	4227.0	2
279292bb36dbfc7f505e36ebf 038c81eb1d1d63e ...	You're The One - Dwight Yoakam ...	3781.0	3
279292bb36dbfc7f505e36ebf 038c81eb1d1d63e ...	Dog Days Are Over (Radio Edit) - Florence + The ...	3633.0	4
279292bb36dbfc7f505e36ebf 038c81eb1d1d63e ...	Revelry - Kings Of Leon	3527.0	5
279292bb36dbfc7f505e36ebf 038c81eb1d1d63e ...	Horn Concerto No. 4 in E flat K495: II. Romance ...	3161.0	6
279292bb36dbfc7f505e36ebf 038c81eb1d1d63e ...	Secrets - OneRepublic	3148.0	7
279292bb36dbfc7f505e36ebf 038c81eb1d1d63e ...	Hey_ Soul Sister - Train	2538.0	8
279292bb36dbfc7f505e36ebf 038c81eb1d1d63e ...	Fireflies - Charttraxx Karaoke ...	2532.0	9
279292bb36dbfc7f505e36ebf 038c81eb1d1d63e ...	Tive Sim - Cartola	2521.0	10

## Passo 3: fazendo previsões

Mas a saída para o usuário 0  
é igual para o usuário 1?



[illegible]

# Passo 4: fazendo predições personalizadas

```
modelo_popularidade.recommend(users=[users[0]])
```

user_id	song	score	rank
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	Sehr kosmisch - Harmonia	4754.0	1
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	Undo - Björk	4227.0	2
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	You're The One - Dwight Yoakam ...	3781.0	3
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	Dog Days Are Over (Radio Edit) - Florence + The ...	3633.0	4
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	Revelry - Kings Of Leon	3527.0	5
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	Horn Concerto No. 4 in E flat K495: II. Romance ...	3161.0	6
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	Secrets - OneRepublic	3148.0	7
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	Fireflies - Chartraxx Karaoke ...	2532.0	8
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	Tive Sim - Cartola	2521.0	9
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	Drop The World - Lil Wayne / Eminem ...	2053.0	10

```
modelo_personalizado.recommend(users=[users[0]])
```

user_id	song	score	rank
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	Cuando Pase El Temblor - Soda Stereo ...	0.0194504536115	1
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	Fireflies - Chartraxx Karaoke ...	0.0144737317012	2
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	Love Is A Losing Game - Amy Winehouse ...	0.0142865960415	3
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	Marry Me - Train	0.014133471709	4
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	Secrets - OneRepublic	0.013591665488	5
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	Sehr kosmisch - Harmonia	0.0133987894425	6
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	Te Hacen Falta Vitaminas - Soda Stereo ...	0.0129302831796	7
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	OMG - Usher featuring will.i.am ...	0.0127778282532	8
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	Y solo se me ocurre amarte (Unplugged) - ...	0.0123411279458	9
c66c10a9567f0d82ff31441a9fd5063e5cd9dfe8 ...	No Dejes Que... - Caifanes ...	0.0121042499175	10

# Passo 4: fazendo previsões personalizadas

```
modelo_popularidade.recommend(users=[users[1]])
```

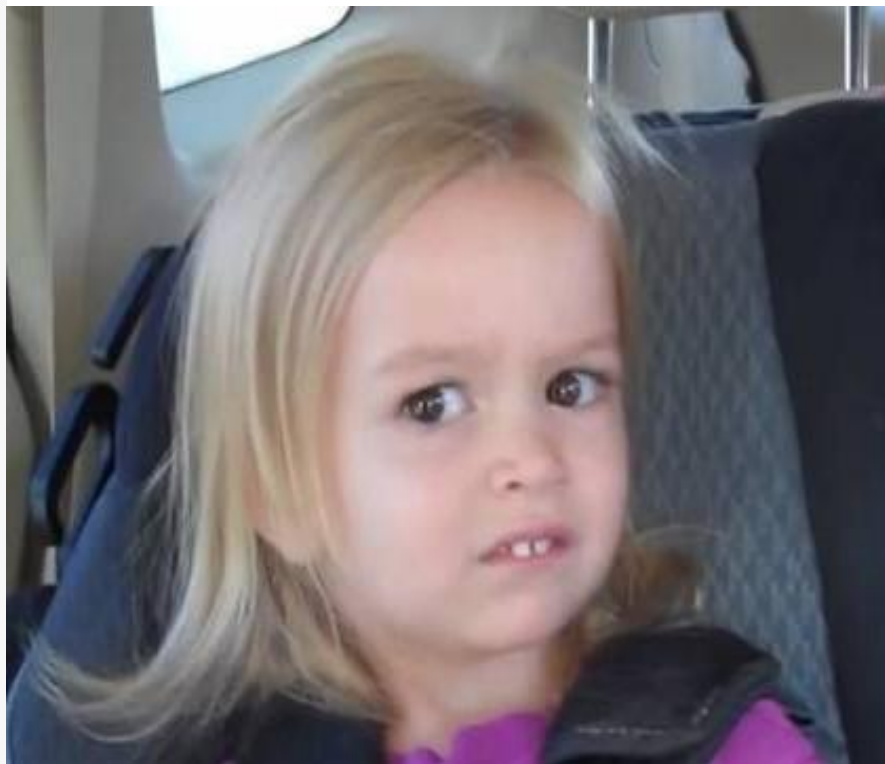
user_id	song	score	rank
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	Sehr kosmisch - Harmonia	4754.0	1
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	Undo - Björk	4227.0	2
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	You're The One - Dwight Yoakam ...	3781.0	3
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	Dog Days Are Over (Radio Edit) - Florence + The ...	3633.0	4
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	Revelry - Kings Of Leon	3527.0	5
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	Horn Concerto No. 4 in E flat K495: II. Romance ...	3161.0	6
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	Secrets - OneRepublic	3148.0	7
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	Hey_ Soul Sister - Train	2538.0	8
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	Fireflies - Charttraxx Karaoke ...	2532.0	9
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	Tive Sim - Cartola	2521.0	10

```
modelo_personalizado.recommend(users=[users[1]])
```

user_id	song	score	rank
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	Riot In Cell Block Number Nine - Dr Feelgood ...	0.0374999940395	1
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	Sei Lá Manguera - Elizeth Cardoso ...	0.0331632643938	2
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	The Stallion - Ween	0.0322580635548	3
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	Rain - Subhumans	0.0314159244299	4
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	West One (Shine On Me) - The Ruts ...	0.0306771993637	5
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	Back Against The Wall - Cage The Elephant ...	0.0301204770803	6
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	Life Less Frightening - Rise Against ...	0.0284431129694	7
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	A Beggar On A Beach Of Gold - Mike And The ...	0.0230024904013	8
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	Audience Of One - Rise Against ...	0.0193938463926	9
279292bb36dbfc7f505e36ebf038c81eb1d1d63e ...	Blame It On The Boogie - The Jacksons ...	0.0189873427153	10

## Atividade prática individual (valendo 2.0 pts)

- Identifique a música mais recomendada para o décimo usuário e apresente as músicas mais similares a ela.
- Quais as músicas mais similares a "You And Your Heart - Jack Johnson"



**Dúvidas? Sugestões?  
Inquietações?  
Aconselhamentos?**

- ▶ Desabafe em:  
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