Projeto
Inteligência Artificial

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FCI

Integrantes

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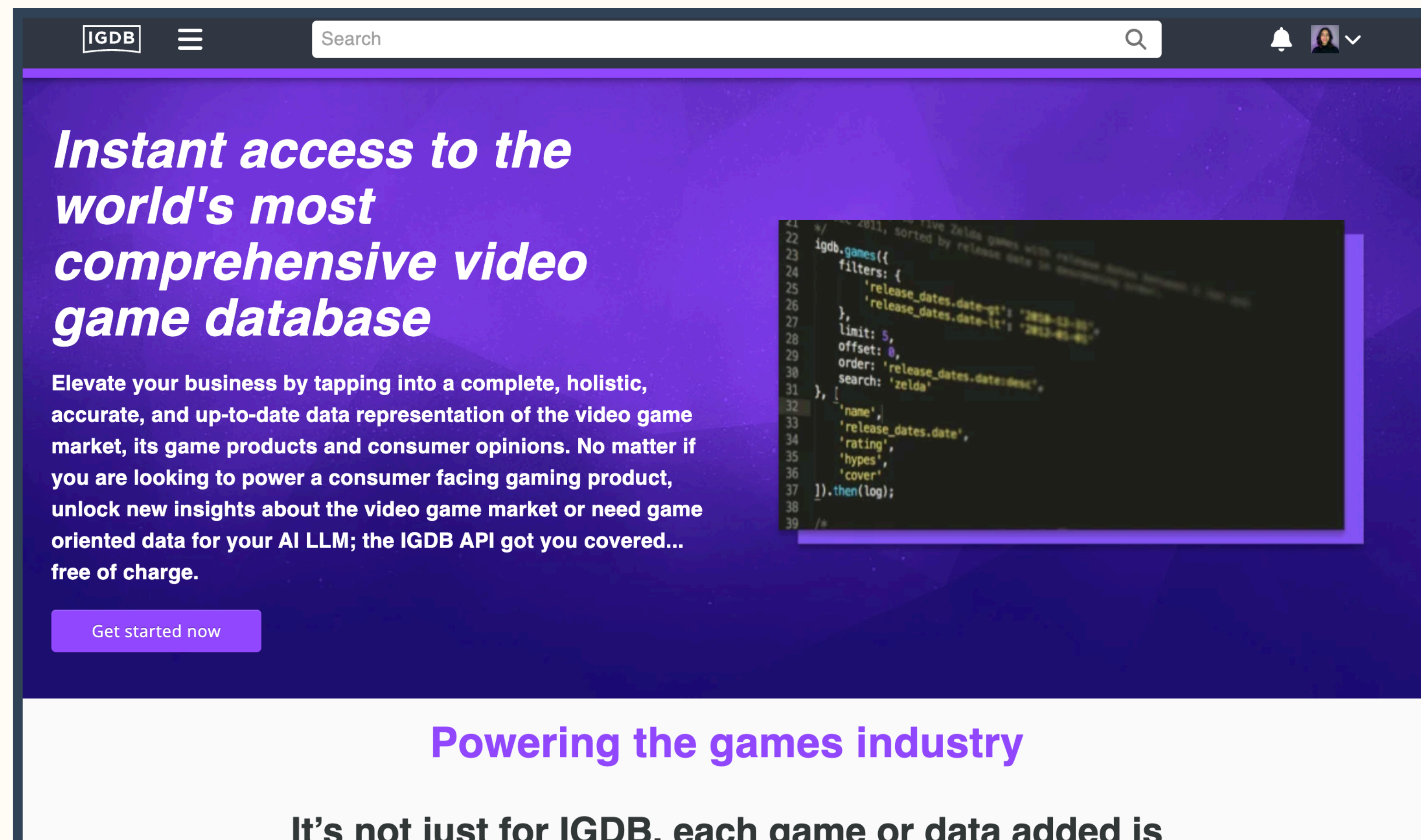Paulo Sonzzini Ribeiro de Souza

Laura Carolina Balbachan dos Santos

Inicialmente...

Como personagens e suas características influenciam a popularidade de um jogo?

API do IGDB
(Internet Game Database)

IGDB ☰ | Search 🔍 | 🔔 👤⌄

Instant access to the world's most comprehensive video game database

Elevate your business by tapping into a complete, holistic, accurate, and up-to-date data representation of the video game market, its game products and consumer opinions. No matter if you are looking to power a consumer facing gaming product, unlock new insights about the video game market or need game oriented data for your AI LLM; the IGDB API got you covered... free of charge.

Get started now

```
22
23  igdb.games({
24      filters: {
25          'release_dates.date-gt': '2020-12-03',
26          'release_dates.date-lt': '2013-01-01'
27      },
28      limit: 5,
29      offset: 0,
30      order: 'release_dates.date:desc',
31      search: 'zelda'
32  }, [
33      'name',
34      'release_dates.date',
35      'rating',
36      'hypes',
37      'cover'
38  ]).then(log);
39  /*
```

Powering the games industry

It's not just for IGDB, each game or data added is

Tema

Quais são os fatores que mais influenciam a popularidade de jogos?

Arquivos

main.py

```python
import requests
import openpyxl

# Configuração global
NUM_JOGOS = 500

# Client ID e Client Secret
CLIENT_ID = "urvgaeli6cz3qb7r2fodjd35kqxo9y"
CLIENT_SECRET = "ngg0n3oxfxhvgb6ko8kg5eltqs8fge"

# Enums para Platform Category
PLATFORM_CATEGORY_ENUM = {
    1: "console",
    2: "arcade",
    3: "platform",
    4: "operating_system",
    5: "portable_console",
    6: "computer"
}

# Função para mapear platform category
```

Arquivos

.xlsx

id	name	total_rating	total_rating	category	genres	game_mod	platforms	player_pers	themes	release_dat	popularity
5668	Commandc	75,876659	48	Unknown	Shooter	Single playe	computer, c	Bird view /	Warfare, Ac	1985	0,0000145
2401	Jonah Lom	70	2	Unknown	Simulator, S	Single playe	operating_s	Third perso	None	1998	0,0000054
394	Final Fanta:	89,0023822	46	Unknown	Role-playin	Single playe	portable_cc	Bird view /	Warfare, Fa	Oct 05, 200	0,0001219
4719	Bit.Trip Con	86	2	platform	Shooter, M	Single playe	console	None	Action, Scie	Sep 13, 201	0,0000030
1669	Panzer Dra;	83,4917069	15	Unknown	Shooter	Single playe	console	Third perso	Action	Mar 22, 199	0,0000304
1139	Castlevania	80,2411707	94	Unknown	Platform, A	Single playe	computer, p	Side view	Action, Hor	Mar 15, 201	0,0000327
176	Ballblazer	57,867424:	7	Unknown	Racing, Spc	Single playe	computer, c	First person	Action, Scie	1985	0,0001091
999	Oddworld:	91,1972820	222	Unknown	Platform, P	Single playe	operating_s	Side view	Action, Scie	Sep 18, 199	0,0002577
1308	Medal of H	74,9882974	69	Unknown	Shooter	Single playe	console, co	First person	Warfare, Ac	Oct 23, 200	0,0000426
2218	Lilly Adventure			Unknown	Platform, A	Single playe	console	Side view	Action	1983	0,0001091
8497	Micro Mach	69,5493444	5	Unknown	Racing, Arc	Single playe	console	Bird view /	Action	Mar 24, 199	0,0000777
8515	Twinsen's L	84,1877539	45	Unknown	Role-playin	Single playe	operating_s	Bird view /	Open world	1995	0,0001637
783	Mass Effect	82,373565:	60	console	Shooter, Ro	Single playe	operating_s	Third perso	Science fict	Jun 15, 201	0,0000304
5020	Monster Trux Extreme: Offroad Edi			Unknown	Racing	Single playe	console, op	None	None	Oct 03, 200	0,0000054
1661	Tobal No. 1	83,4083007	8	Unknown	Fighting, Ac	Single playe	console	Third perso	Action	Aug 02, 199	0,0000060
1540	Wipeout 3	80,1186555	14	Unknown	Racing	Single playe	console	First person	Action, Scie	Sep 08, 199	0,0000213
2542	Fighting Fo	73,680511:	67	Unknown	Fighting, St	Single playe	operating_s	Third perso	Action	Nov 24, 200	0,0000243
286	Quake II	83,157471	283	Unknown	Shooter	Single playe	operating_s	First person	Action, Scie	Oct 09, 200	0,0002134
3435	64 Trump Collection: Alice no Waku			Unknown	Turn-based	Single playe	console	Bird view /	Fantasy	Aug 07, 199	0,0001637
5435	Sherlock Holmes: Consulting Detec			Unknown	Simulator, A	Single playe	computer, c	None	None	1991	0,0000060
819	Grand Thef	74,481070:	498	Unknown	Shooter, Ra	Single playe	operating_s	Bird view /	Open world	Oct 22, 199	0,0001067
5815	Drake of th	40	4	Unknown	Shooter	Single playe	operating_s	Third perso	Action, Hor	Nov 03, 200	0,0000044
980	Grand Thef	77,7199890	432	Unknown	Shooter, Ra	Single playe	operating_s	Bird view /	Sandbox, O	Oct 21, 199	0,0001128
2436	Buck Roger	79,1436975	7	Unknown	Role-playin	Single playe	operating_s	First person	Science fict	1990	0,0000777
3367	Big Mountain 2000			Unknown	Sport	Single playe	console, cc	Third perso	Non-fiction	Oct 10, 200	0,0000033
4833	Endless Oce	80,043869(	12	Unknown	Simulator, A	Single playe	console	Third perso	Non-fiction	Feb 22, 201	

Arquivos
notebooks

```python
# Carrega o primeiro dataset
file_path1 = 'games_data0.xlsx'
games_df0 = pd.read_excel(file_path1, sheet_name='Games')

# Carrega o segundo dataset
file_path2 = 'games_data.xlsx'
games_df = pd.read_excel(file_path2, sheet_name='Games')

# Dá merge nos datasets carregados
merged_games_df = pd.concat([games_df0, games_df], ignore_index=True)

# Salvar o dataset mesclado
merged_games_df.to_excel('merged_games_data.xlsx', index=False, sheet_name='Games')
```

Arquivos
notebooks

```python
# Treinando Regressão Linear
linear_pipeline.fit(X_train, y_train)
y_pred_linear = linear_pipeline.predict(X_test)

# Treinando Árvore de Decisão
tree_pipeline.fit(X_train, y_train)
y_pred_tree = tree_pipeline.predict(X_test)

# Treinando o modelo Random Forest
random_forest_pipeline.fit(X_train, y_train)
y_pred_forest = random_forest_pipeline.predict(X_test)

# Avaliando os modelos
linear_r2 = r2_score(y_test, y_pred_linear)
linear_rmse = mean_squared_error(y_test, y_pred_linear, squared=False)

tree_r2 = r2_score(y_test, y_pred_tree)
tree_rmse = mean_squared_error(y_test, y_pred_tree, squared=False)

forest_r2 = r2_score(y_test, y_pred_forest)
forest_rmse = mean_squared_error(y_test, y_pred_forest, squared=False)

# Exibindo resultados
print("Regressão Linear:")
print(f"R²: {linear_r2:.4f}, RMSE: {linear_rmse:.4f}")

print("\nÁrvore de Decisão:")
print(f"R²: {tree_r2:.4f}, RMSE: {tree_rmse:.4f}")

print("\nRandom Forest:")
print(f"R²: {forest_r2:.4f}, RMSE: {forest_rmse:.4f}")
```

Arquivos

notebooks

```
Regressão Linear:
R²: 0.4764, RMSE: 0.0001

Árvore de Decisão:
R²: 0.7708, RMSE: 0.0000

Random Forest:
R²: 0.8408, RMSE: 0.0000
```

Arquivos
notebooks

```
Top 10 Variáveis Mais Importantes para a Popularidade (Random Forest):
                                        Feature  Importance
1                            total_rating_count    0.756502
0                                  total_rating    0.028771
423                   themes_Warfare, Historical    0.016395
324          themes_Action, Science fiction, Horror    0.015572
298                 player_perspectives_Third person    0.015108
200    platforms_console, operating_system, console, ...    0.011553
181    platforms_computer, operating_system, operatin...    0.009767
166    game_modes_Single player, Multiplayer, Co-oper...    0.009471
87                  genres_Role-playing (RPG), Adventure    0.005433
165            game_modes_Single player, Multiplayer    0.004963
```

GitHub

https://github.com/Balbachan/projeto-IA

Obrigado!