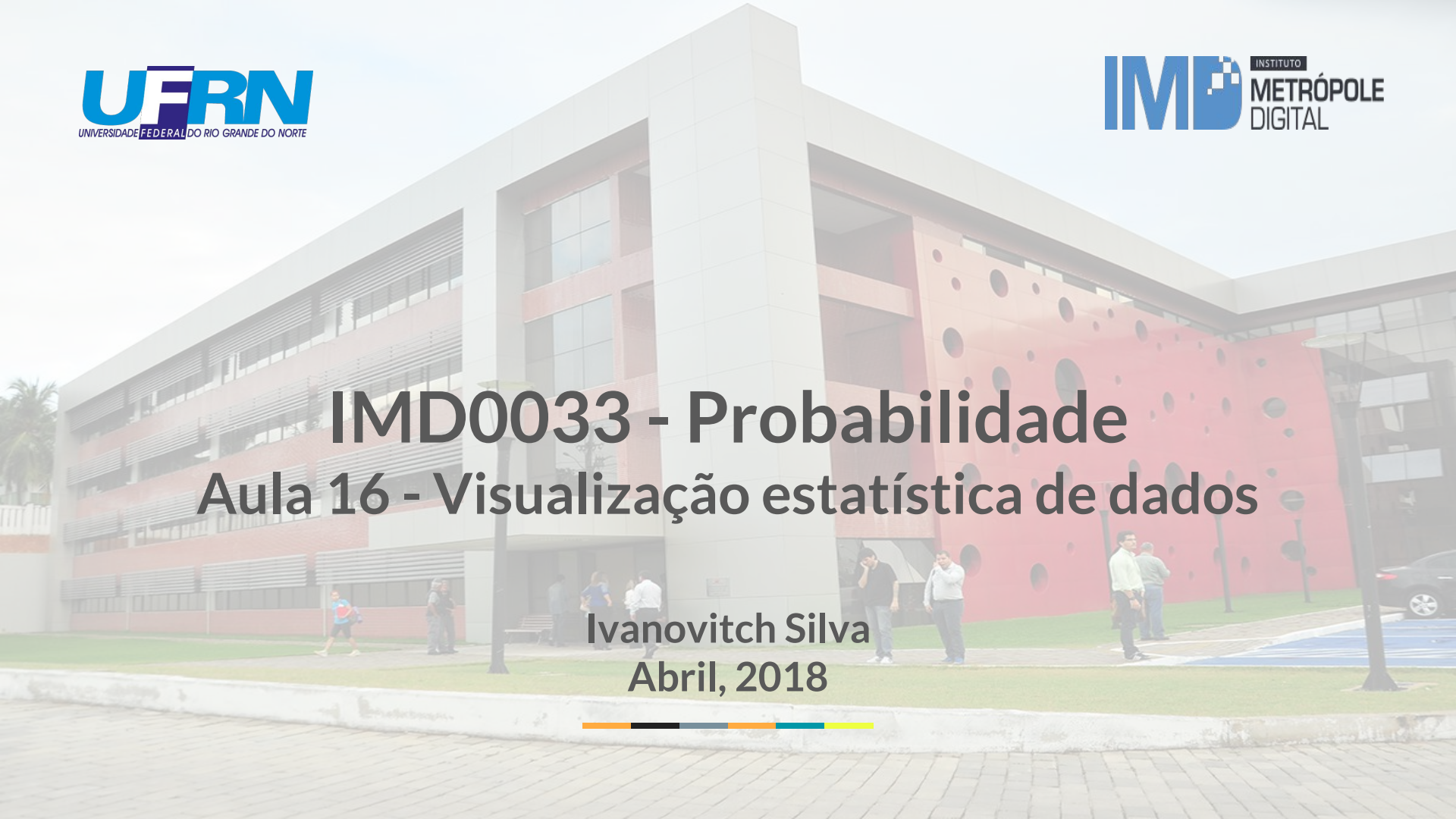


IMD0033 - Probabilidade

Aula 16 - Visualização estatística de dados

Ivanovitch Silva

Abril, 2018

Agenda

- Estudo de caso: competição kaggle
- Introdução ao Seaborn
- Instalação
- Histogramas, KDE
- Personalizando gráficos
- Distribuições condicionais

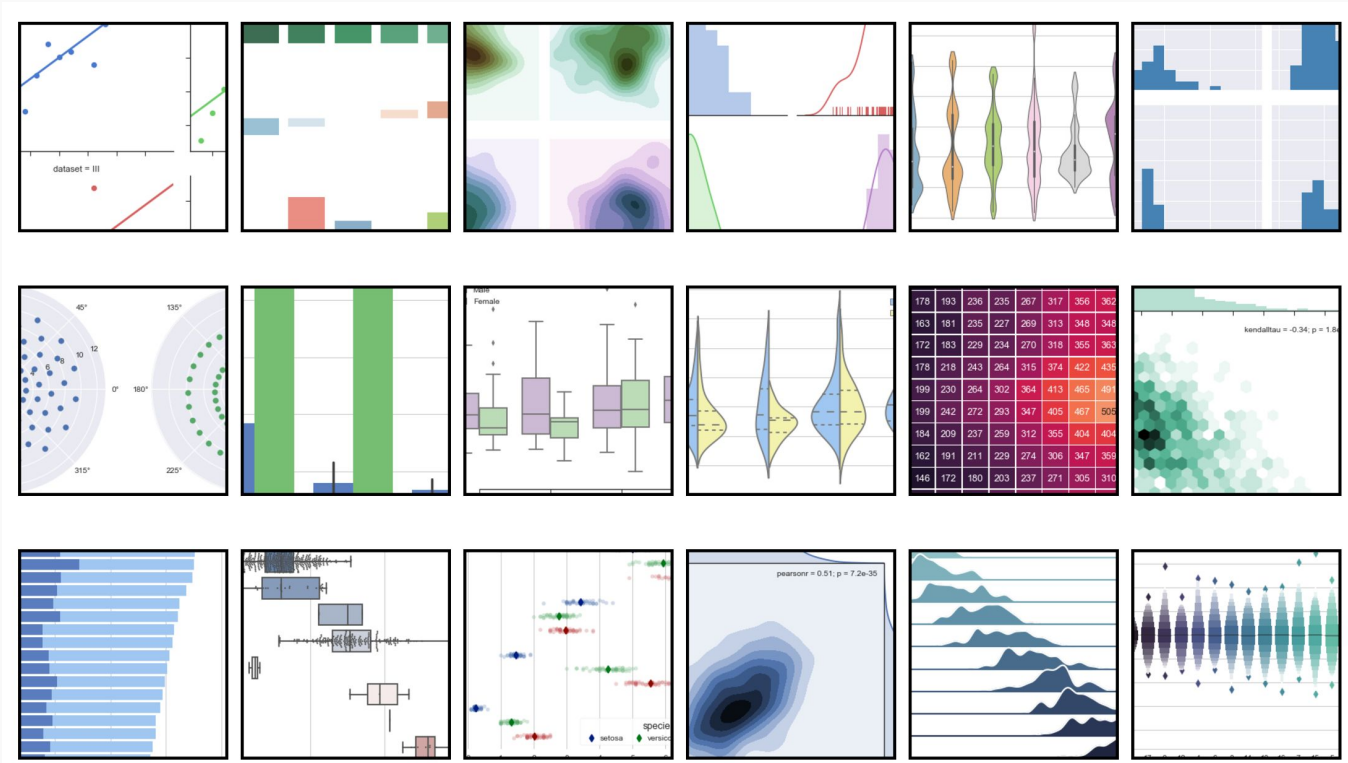
Atualizar o repositório

```
git clone https://github.com/ivanovitchm/imd0033_2018_1.git
```

Ou ....

```
git pull
```

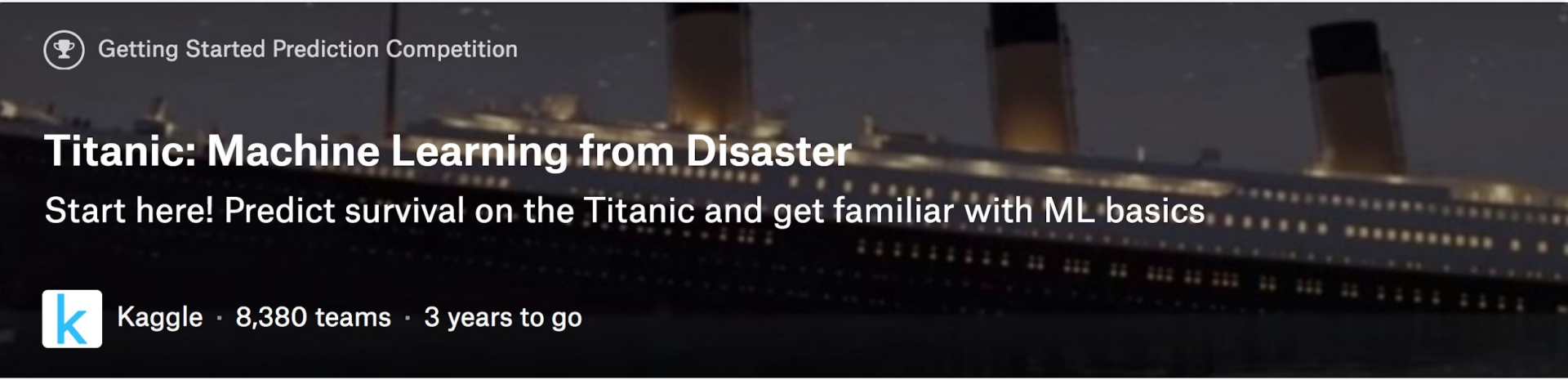
Motivação - Seaborn



Instalação

```
conda install -c conda-forge seaborn
```

Introdução a base de dados



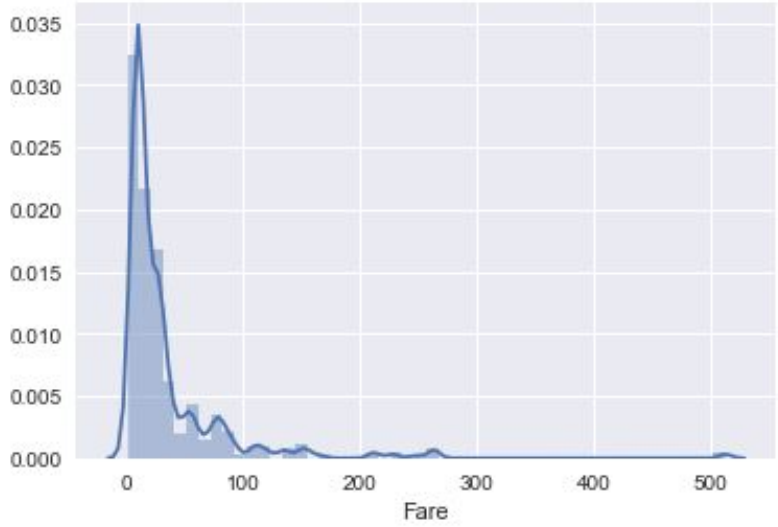
https://www.kaggle.com/c/titanic/data

Introdução a base de dados

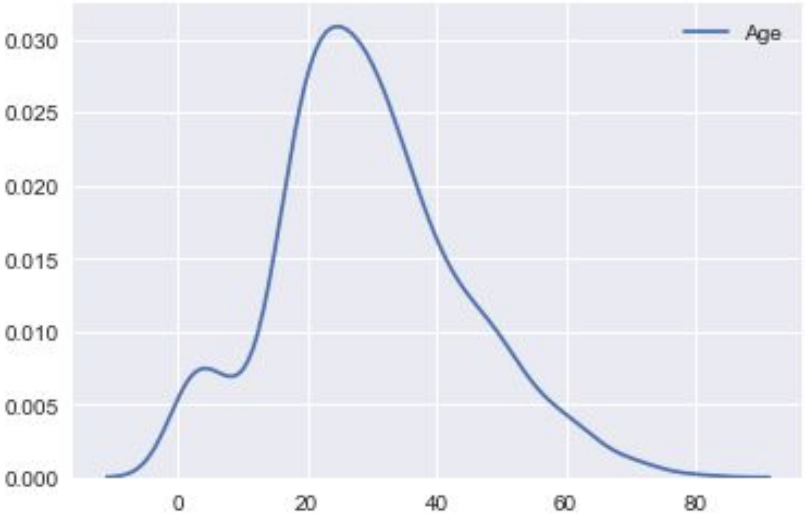
PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
1	0	3	Braund, Mr. Owen Harris	male	22.0	1	0	A/5 21171	7.2500		S
2	1	1	Cumings, Mrs. John Bradley (Florence Briggs Thayer)	female	38.0	1	0	PC 17599	71.2833	C85	C
3	1	3	Heikkinen, Miss. Laina	female	26.0	0	0	STON/O2. 3101282	7.9250		S

Criando um histograma com Seaborn

```
# seaborn is commonly imported as `sns`.
import matplotlib.pyplot as plt
import seaborn as sns

#to switch to seaborn defaults, simply call the set()
sns.set()

# The four preset contexts, in order of relative size,
sns.set_context("notebook")

# plot a univariate distribution of observations.
sns.distplot(titanic["Fare"])
plt.show()
```

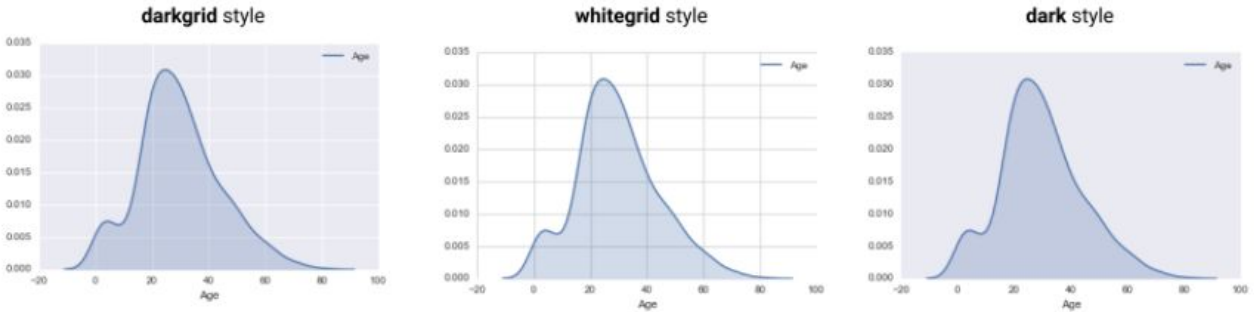


Gerando uma distribuição KDE

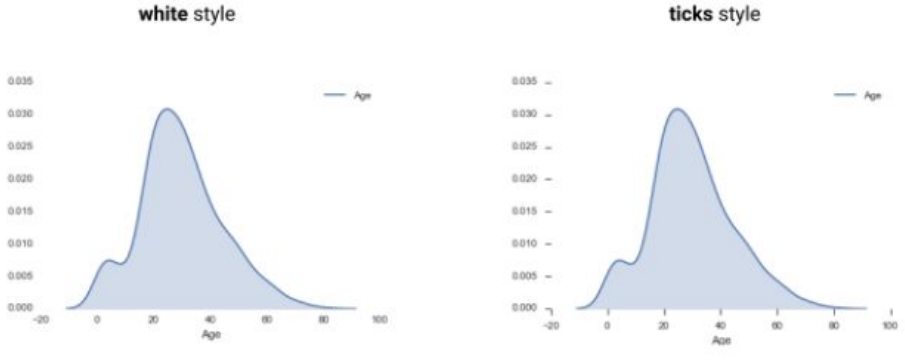



```
sns.kdeplot(titanic["Age"])
plt.show()
```

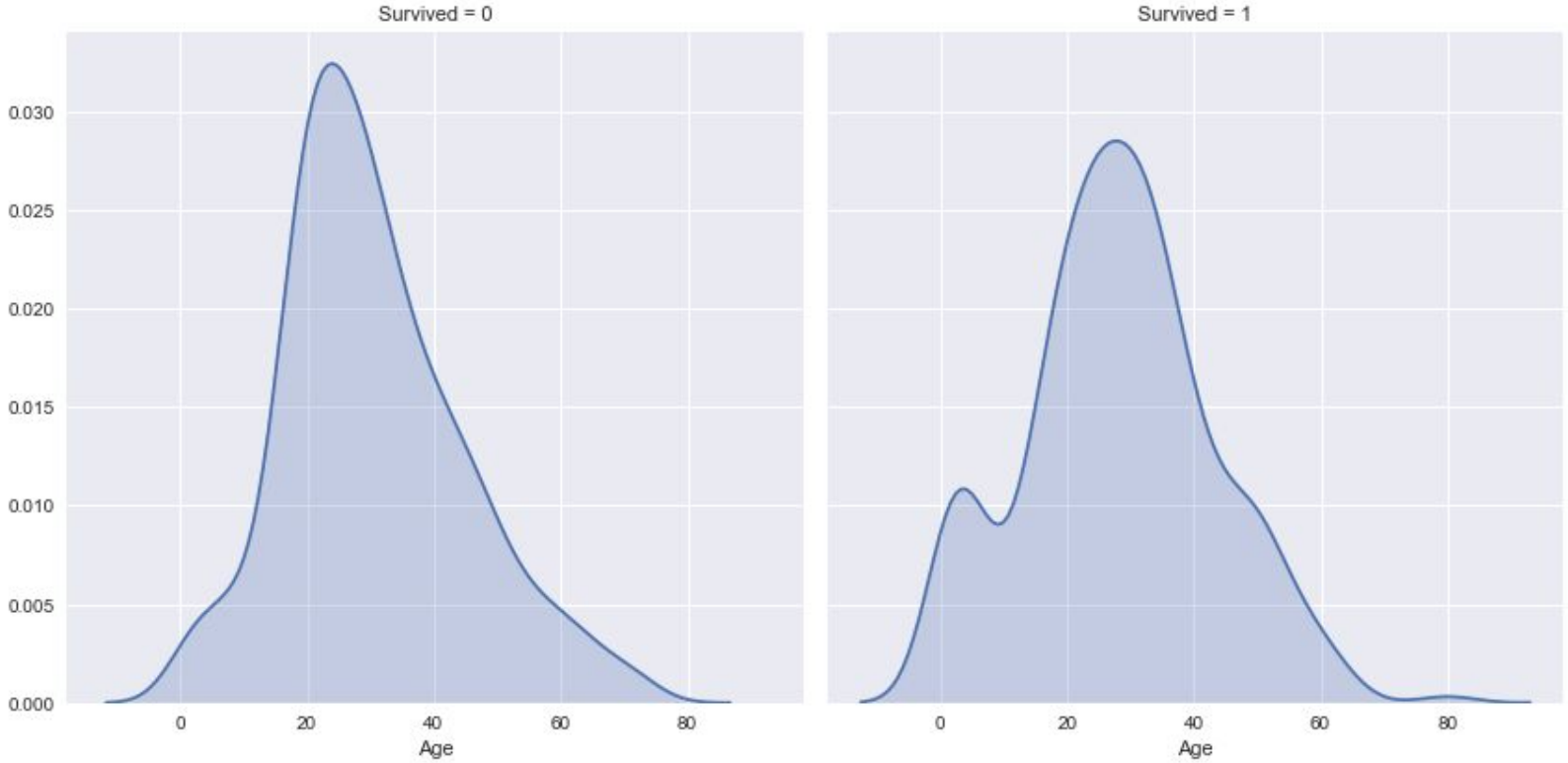
Modificando a aparência da visualização




```
sns.set_style("darkgrid")

sns.despine()
```

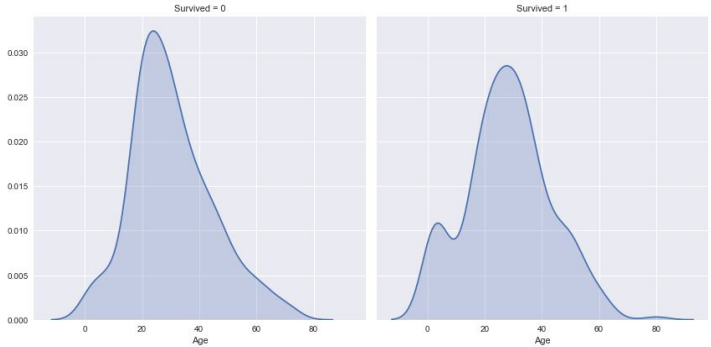


Distribuições condicionais

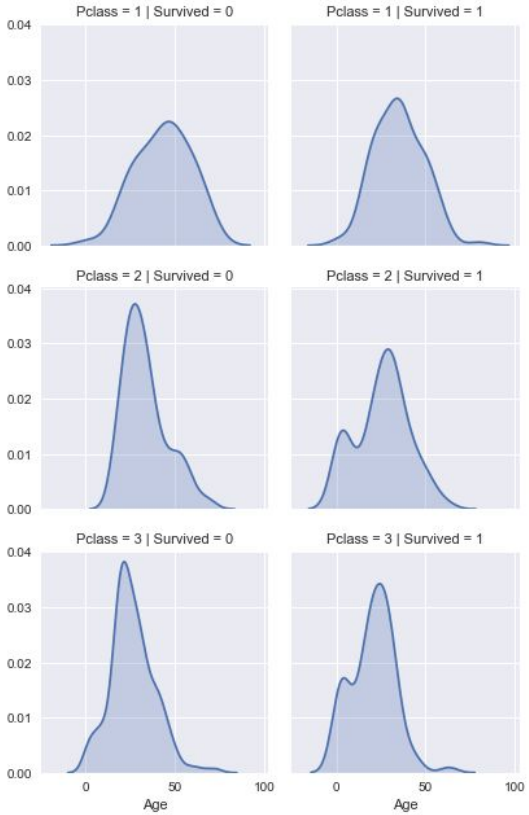


Distribuições condicionais

```
# Condition on unique values of the "Survived" column.
g = sns.FacetGrid(titanic, col="Survived", size=6)

# For each subset of values, generate a kernel density plot of the "Age" columns.
g.map(sns.kdeplot, "Age", shade=True)

# Plot the graph
plt.show()
```

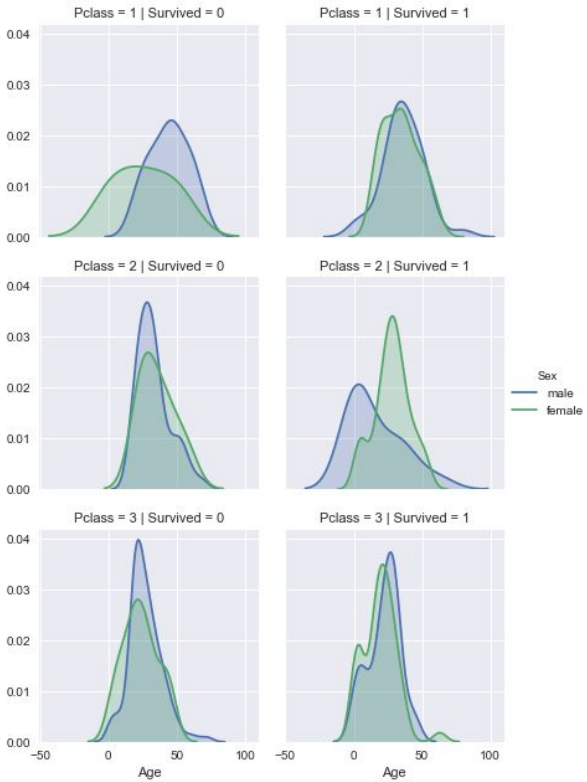


Distribuições condicionais com três variáveis




```
g = sns.FacetGrid(titanic, col="Survived", row="Pclass")
g.map(sns.kdeplot, "Age", shade=True)
sns.despine(left=True, bottom=True)
plt.show()
```

Distribuição condicional com três condições




```
g = sns.FacetGrid(titanic, col="Survived", row="Pclass", hue="Sex", size=3)
g.map(sns.kdeplot, "Age", shade=True)
sns.despine(left=True, bottom=True)
g.add_legend()
plt.show()
```

Seaborn.ipynb