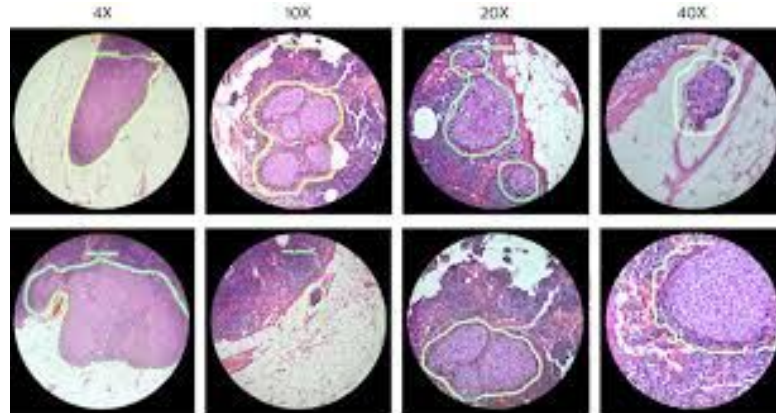


Visão Computacional com *Python*

Por onde começar?

Sara Araújo
Renata Souza





Aplicações



Conceitos iniciais

Composição de uma imagem





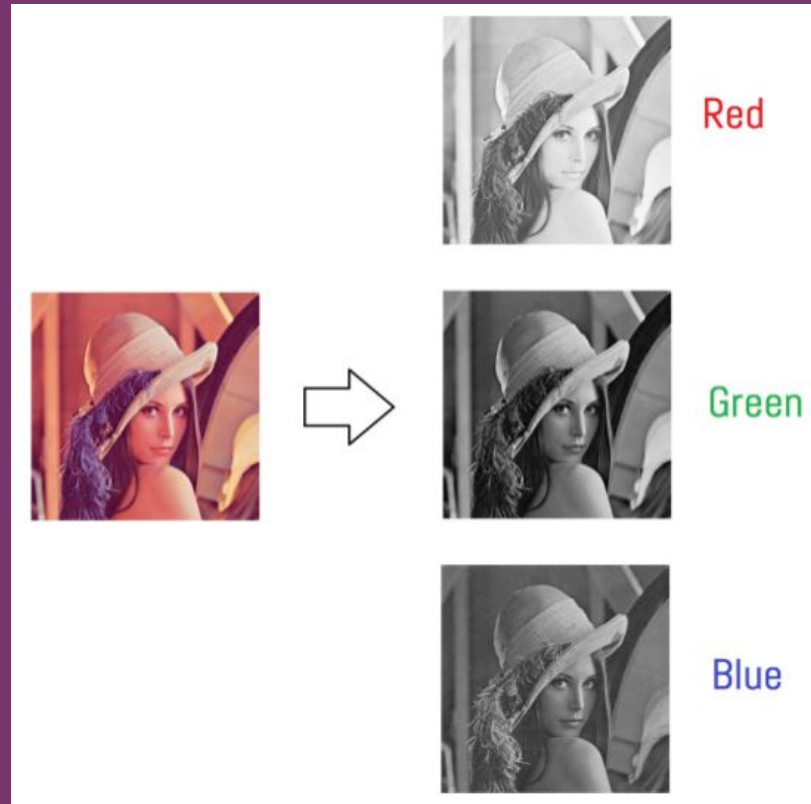
41	43	45	51	56	49	45	40
56	48	65	85	55	52	44	46
59	77	99	81	127	83	46	56
52	116	44	54	55	186	163	163
51	129	46	48	71	164	86	97
50	85	192	140	167	99	51	44
57	63	91	126	102	56	54	49
146	169	213	246	243	139	180	163
41	44	54	56	47	45	36	54

○ Pixel

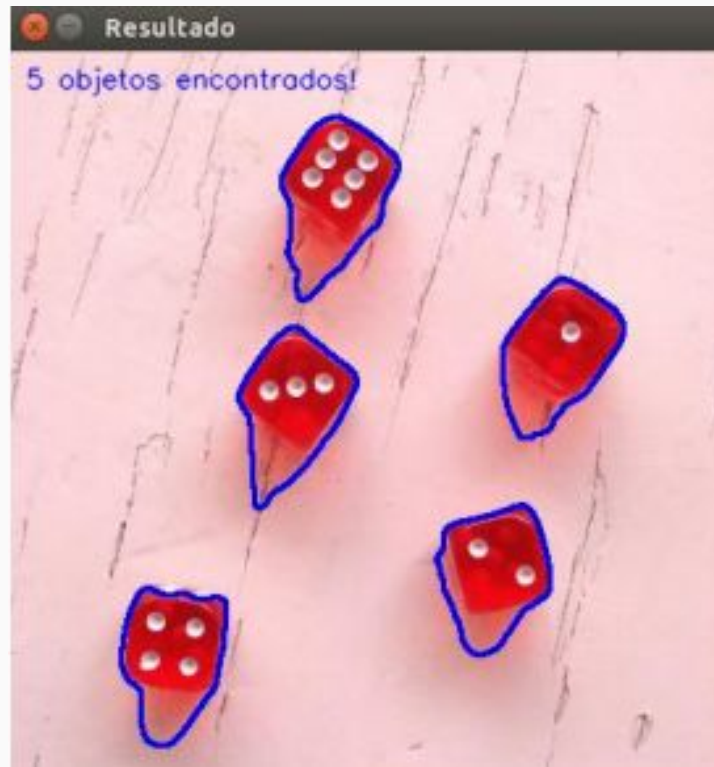
[1]

Cor

RGB, HSV

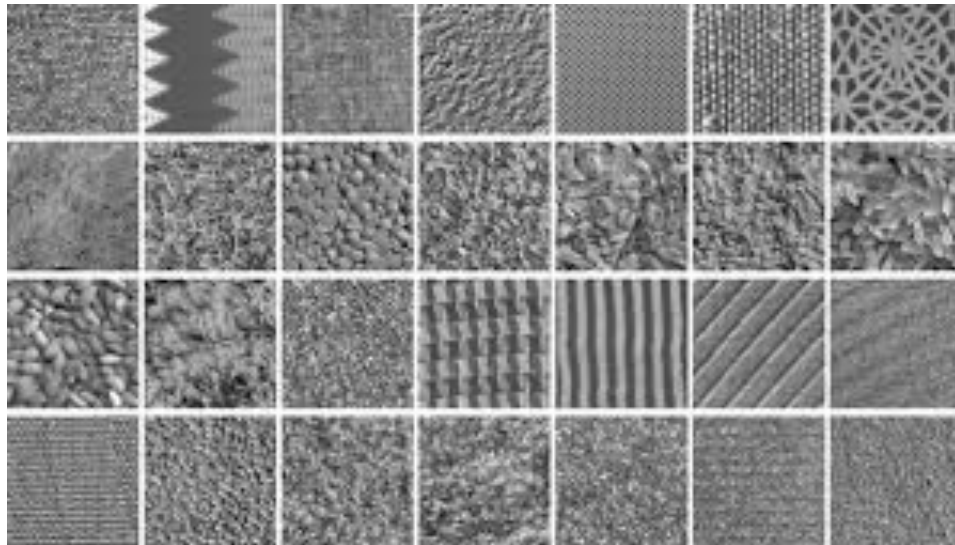


Borda



[3]

Textura



[1]

Processamento Digital de Imagem (PDI)



Processamento Digital de Imagem - Etapas



Aquisição



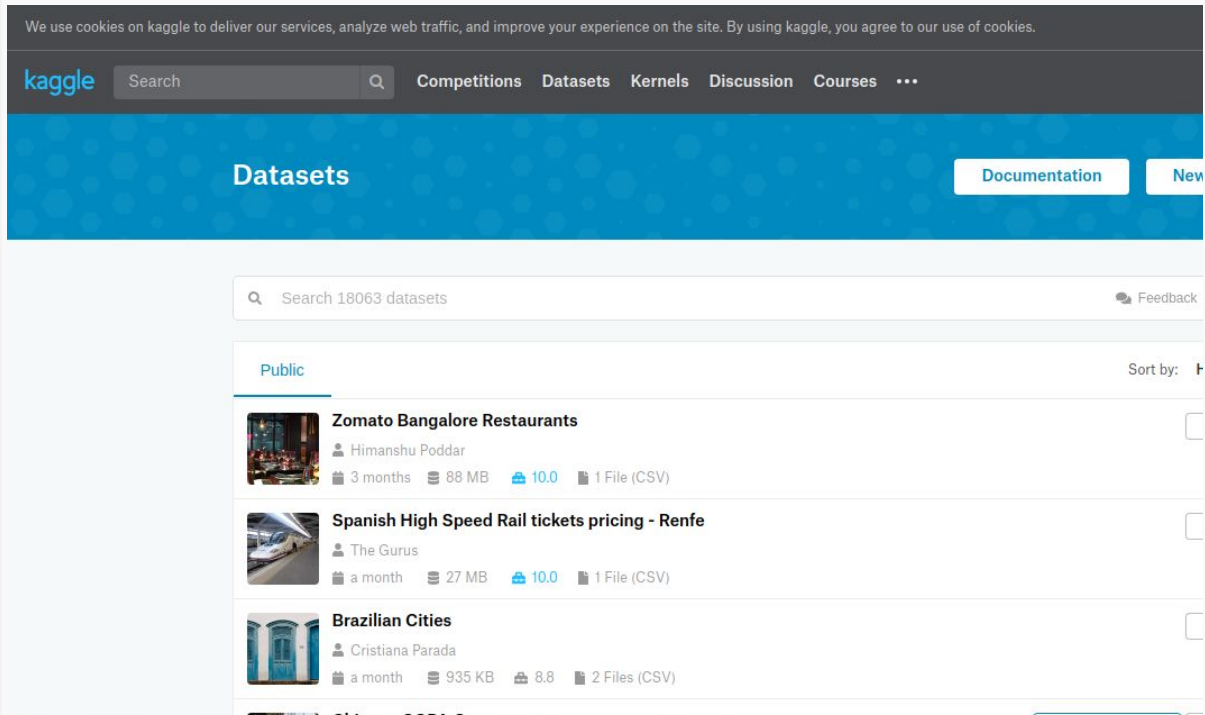
Aquisição de imagens

Base de dados aberta:

Plataforma Kaggle.

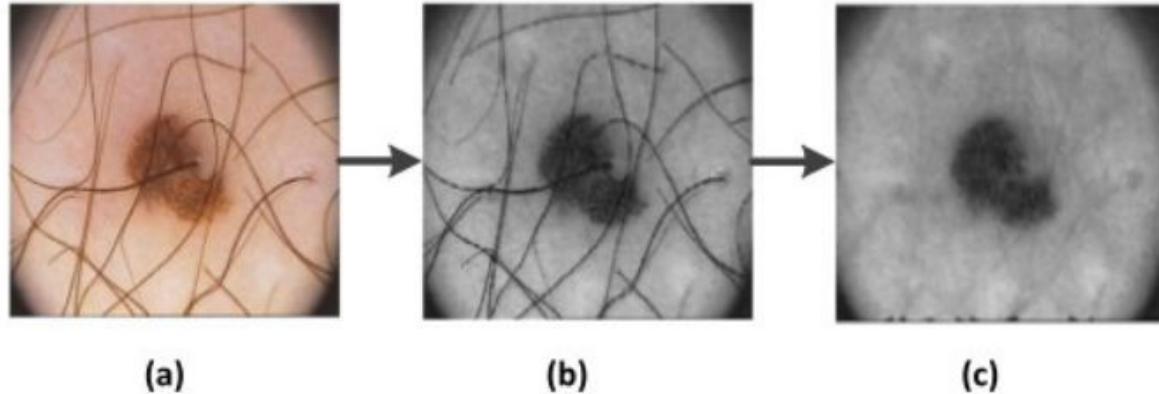
Acesse em:

<https://www.kaggle.com/datasets>



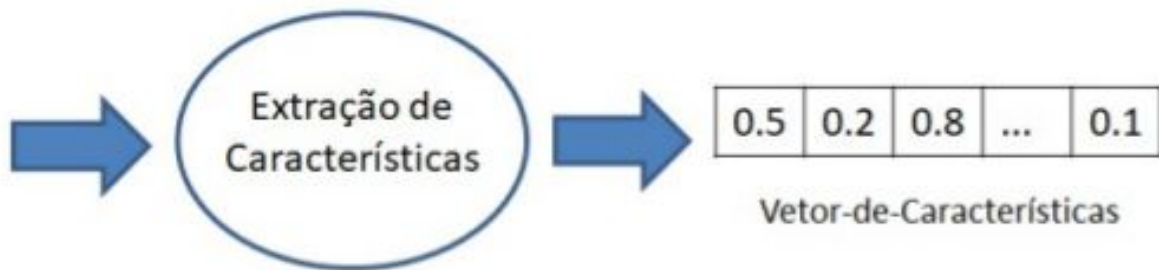
Plataforma Kaggle de datasets. Acesse em: <https://www.kaggle.com/datasets>

Pré-processamento



Pré-processamento para remoção de pelos e artefatos. (a): Imagem original no formato RGB; (b): Imagem do canal B; (c): Imagem original após a remoção dos pelos [4].

Extração de características




Vamos praticar??




Ferramentas

- [Acesse: jupyter.org](https://jupyter.org)



Install About Us Community Documentation NBViewer JupyterHub Widgets Blog



Welcome to the

This Notebook Server was

WARNING

Don't rely on this server

Your server is hosted there

Run some Python

To run the code below:

1. Click on the cell to see
2. Press `SHIFT+ENTER`

A full tutorial for using the

```
In [ ]: %matplotlib inline
import pandas as pd
import numpy as np
import matplotlib
```

Interact (Lorenz, B=fixed(10), angle=(0.,360.),
a=(0.0,50.0),p=(0.0,1), p=(0.0,50.0))

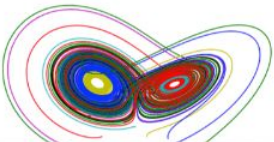
angle 308.2

max time 12

a 10

p 2.6


p 28



create and share documents that contain live code, equations, visualizations and narrative text. Uses include: data cleaning and transformation, numerical simulation, statistical modeling, data visualization, machine learning, and much more.


Try it in your browser

Install the Notebook




Language of choice

The Notebook has support for over 40 programming languages, including Python, R, Julia, and Scala.




Share notebooks

Notebooks can be shared with others using email, Dropbox, GitHub and the [Jupyter Notebook Viewer](#).



Interactive output

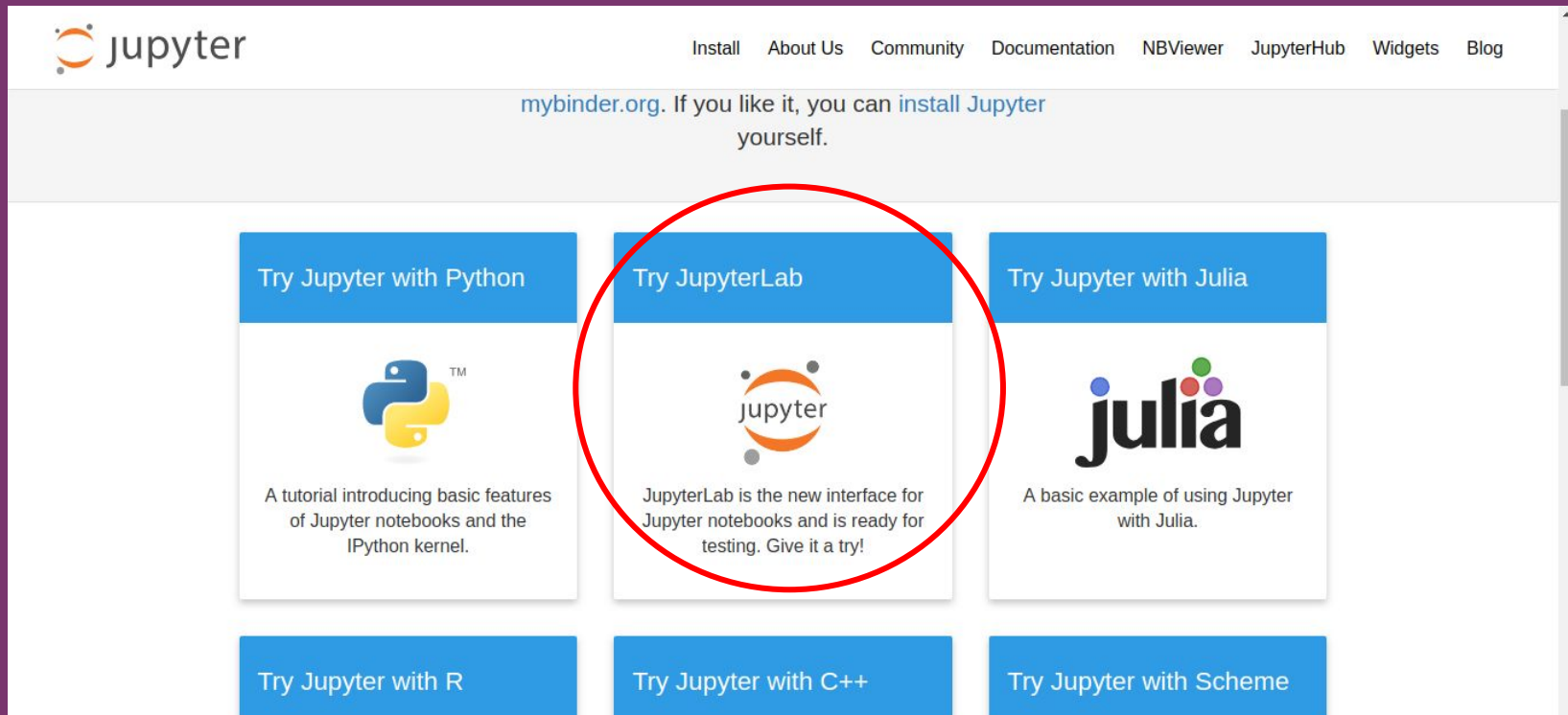
Your code can produce rich, interactive output: HTML, images, videos, LaTeX, and custom MIME types.



Big data integration

Leverage big data tools, such as Apache Spark, from Python, R and Scala. Explore that same data with pandas, scikit-learn, ggplot2, TensorFlow.

- Clique e espere...



Obrigada!

Renata Francelino de Souza
renata.rfsouza@gmail.com

Sara Araújo
saracsas2@gmail.com



Referência Bibliográfica

- [1] FISHER, R. B. et al. Dictionary of Computer Vision and Image Processing. [S.l.]: ProQuest Ebook Central, 2014.
- [2] GONZALEZ RAFAEL C., W.R.E. Digital Image Processing. [S.l.]: Prentice Hall Professional Technical Reference, 1992.
- [3] OPENCV. Introdução à visão computacional com OpenCV 3 . [S.l.], 2019. Disponível em: <https://docs.opencv.org/3.0-beta/doc/py_tutorials/py_setup/py_intro/py_intro.html#intro> Acessado em: 28/05/2019.
- [4] ALFED, N.; KHELIFI, F. Bagged textural and color features for melanoma skin cancer detection in dermoscopic and standard images. Expert Systems with Applications, v. 90, p. 101–110, dez. 2017. ISSN 09574174. Disponível em: <<https://linkinghub.elsevier.com/retrieve/pii/S0957417417305481>>.