

CENTER *for* ROBOTICS
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Culinária do Miojo: **1001 maneiras de se divertir em 3 minutos**



Chef Daniel Tozadore



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Artificial Intelligence (AI)

Daniel Tozadore
Prof. Dra. Roseli Romero

USP São Carlos - 2018

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Agenda

- Introdução
- Algoritmos de Aprendizado de Máquina
- Laboratório
- Databases: Iris (python)
- Exercício
- Conclusão

Inteligência Artificial

Área da computação que estuda os algoritmos de tomada de decisão.



Saraiva SAC

online



Iniciar atendimento

23:44

Boa noite, tudo bem?

23:44

Sou a assistente virtual da Saraiva :)

23:44

Torcendo para seu pedido chegar logo? Como posso te ajudar?

23:44

Meu pedido está atrasado

23:44

Estes são seus últimos pedidos.
Sobre qual deles estamos conversando? 📌

23:44

Pedido

Inteligência Artificial

your Profile Photo, Image may contain: 1 person, smiling, sky and outdoor

 Update Profile Picture

Daniel Tozadore
(Alface)

[Timeline](#) [About](#)



Daniel Tozadore
(Alface)

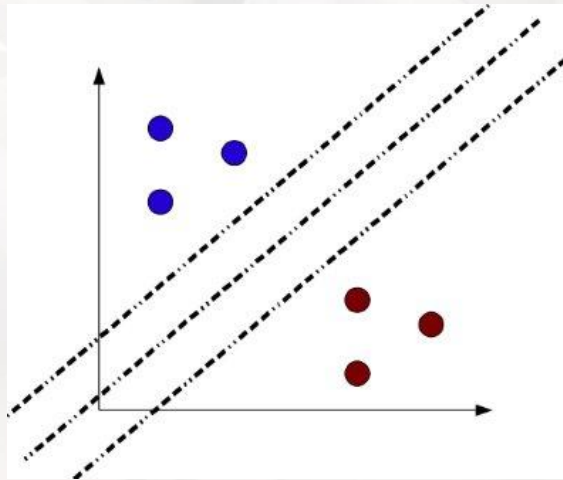
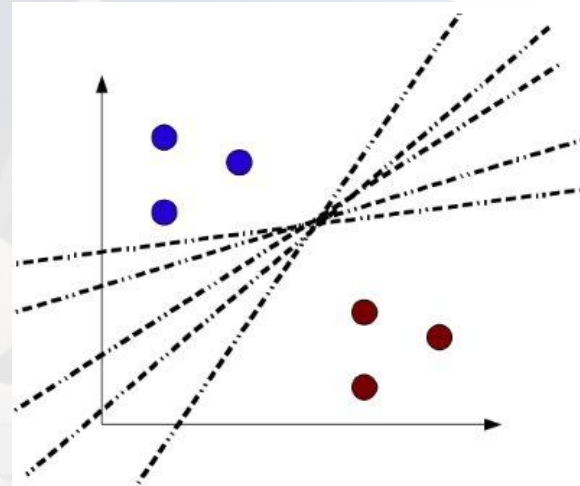
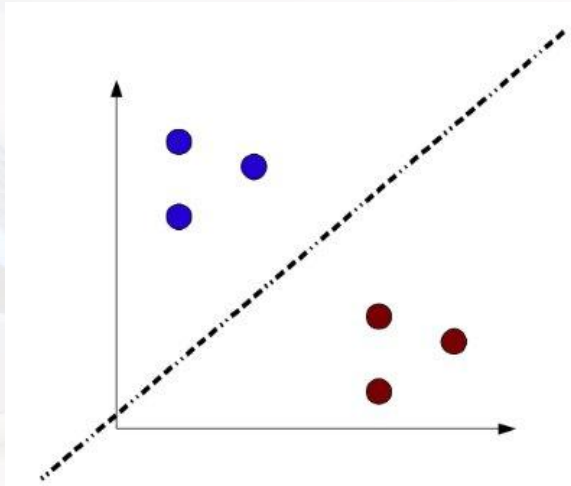
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Inteligência Artificial



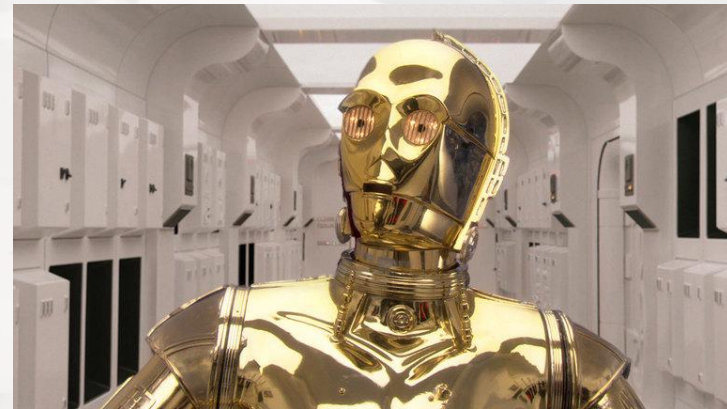
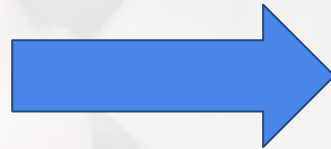
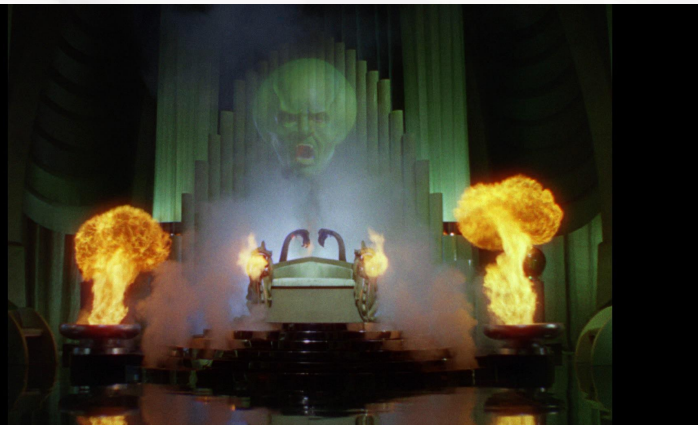
 serasa
experian™

Como as máquinas aprendem?

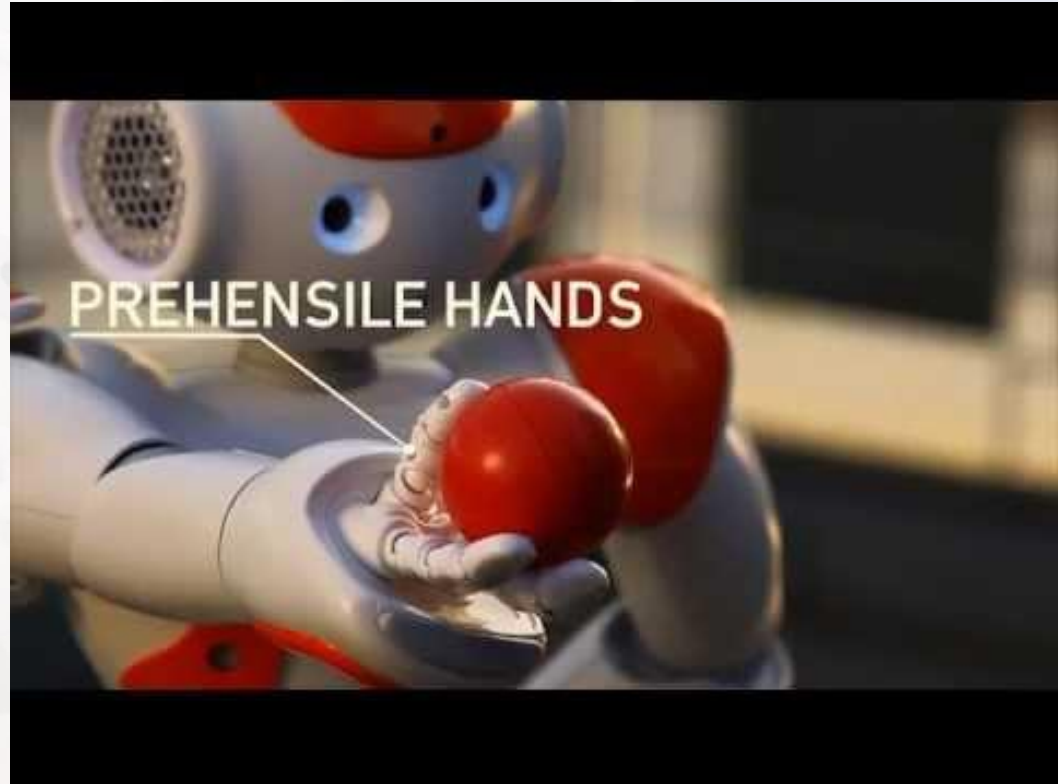


Inteligência Artificial

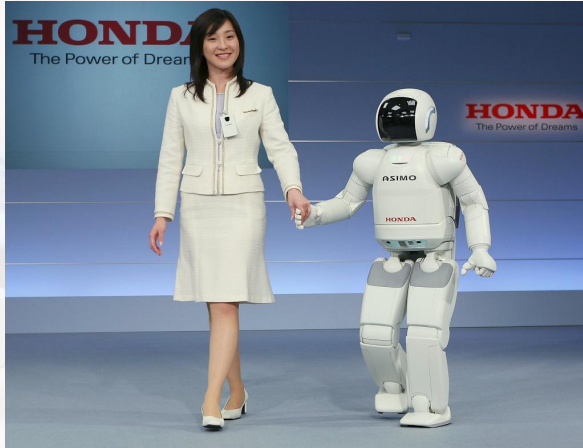
Como as técnicas de IA viabilizam a interação de forma natural?



Casos de sucesso



Casos de sucesso





Algoritmos de Aprendizado de Máquinas

Algoritmos

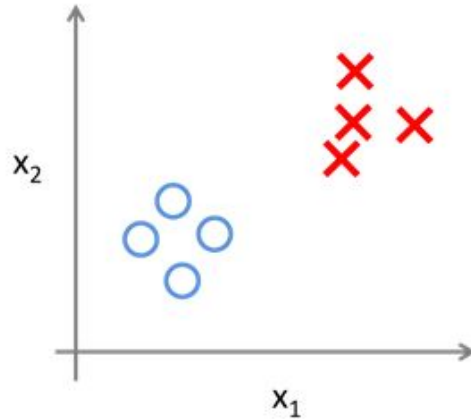
Supervisionados

Aprendem com exemplos.

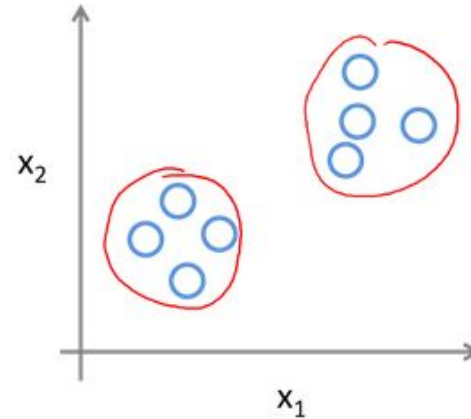
Não- Supervisionados

Aprendem com exemplos.

Supervised Learning

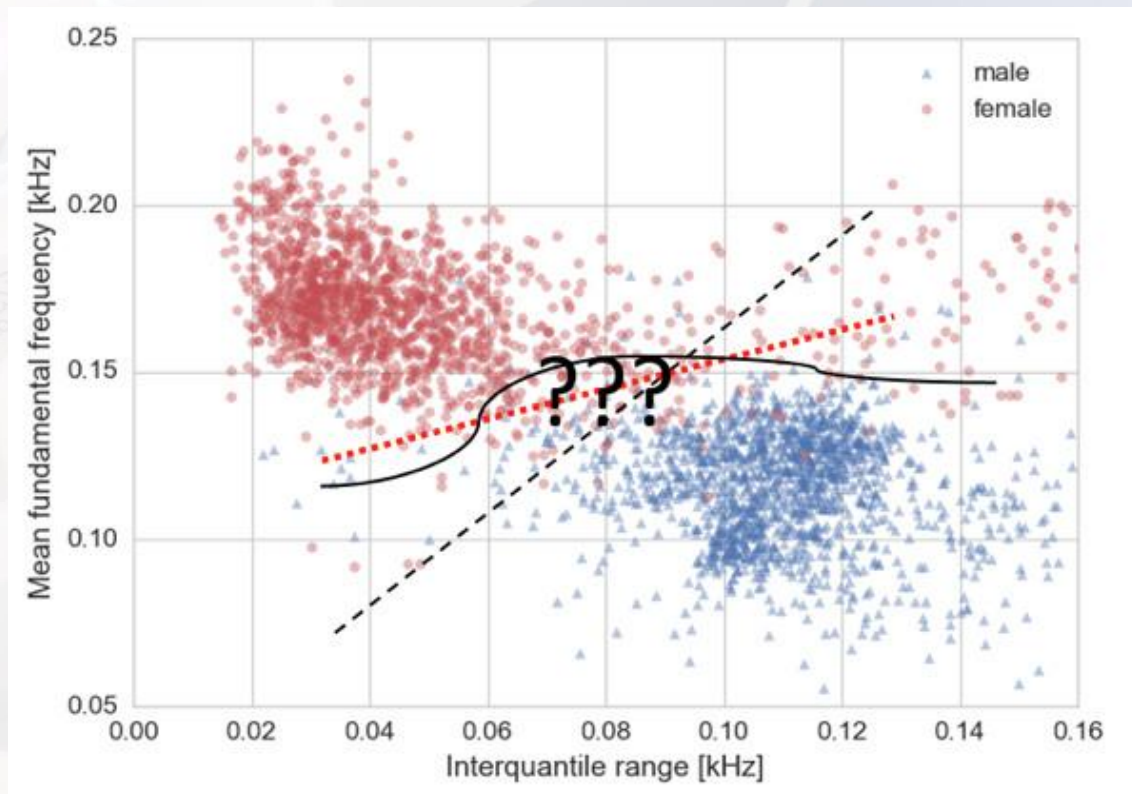


Unsupervised Learning



Algoritmos Não-Supervisionados

- K-means
- SOM
- Hierarch



Espaço de Características

The machine learning framework

$$y = f(x)$$

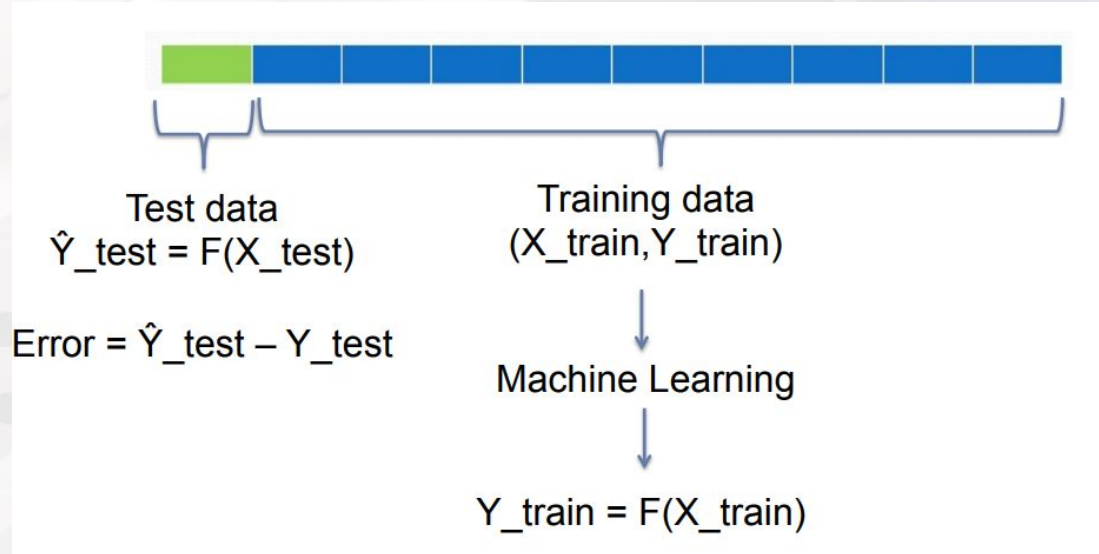
output prediction function Image feature

$$\begin{array}{l} X_{11}, X_{12}, X_{13}, \dots, X_{1(n-1)}, X_{1n} = Y_1 \\ X_{21}, X_{22}, X_{23}, \dots, X_{2(n-1)}, X_{2n} = Y_2 \\ \dots \\ X_{n1}, X_{n2}, X_{n3}, \dots, X_{n(n-1)}, X_{nn} = Y_n \end{array}$$

X

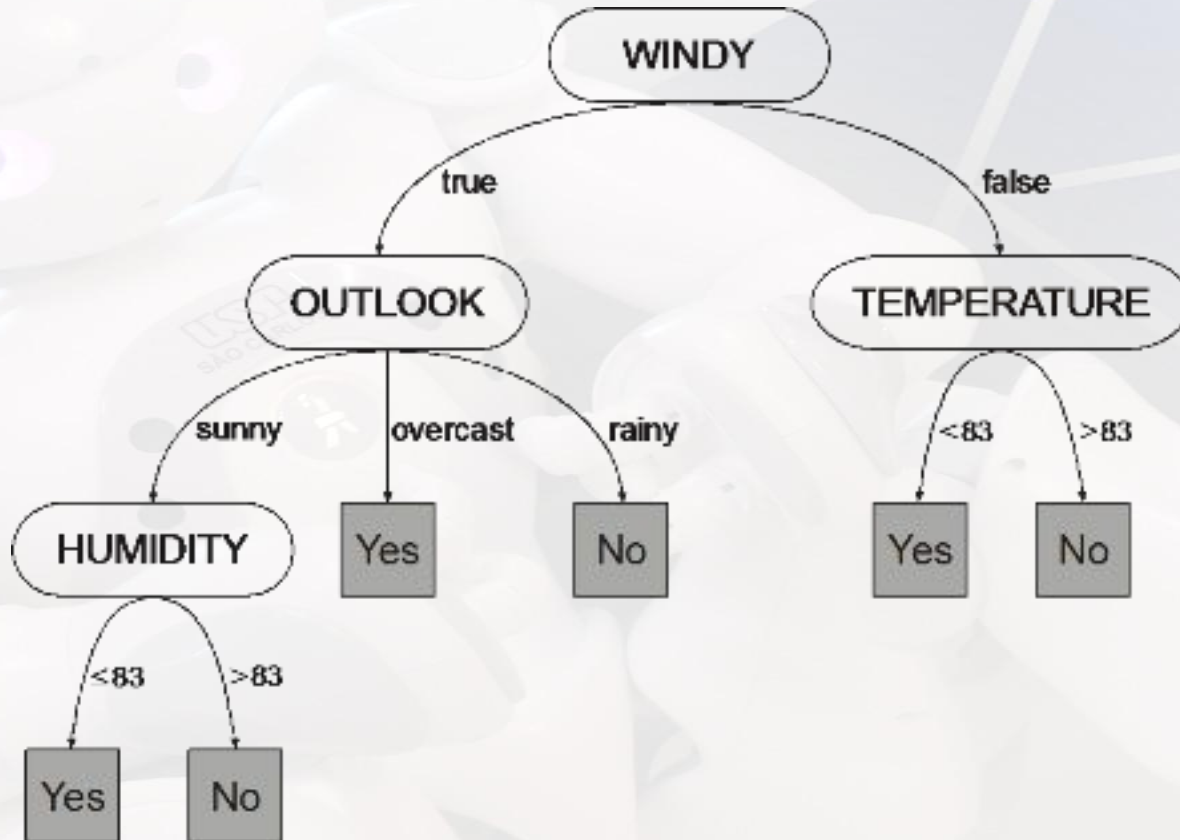
Y

Espaço de Características

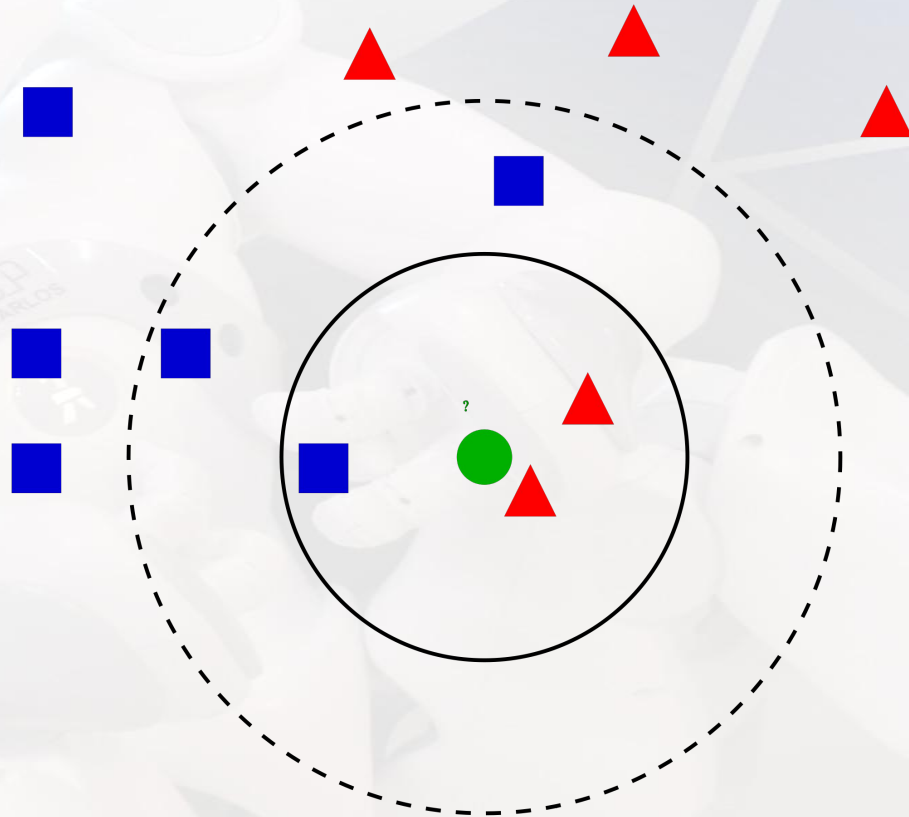


Algoritmos Supervisionados

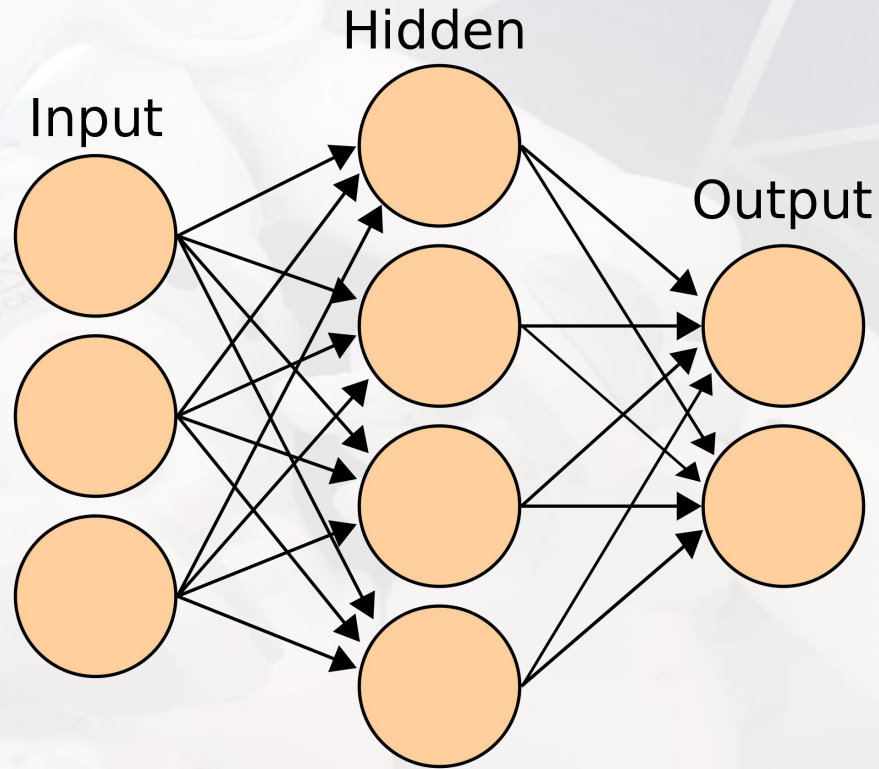
Decision Tree



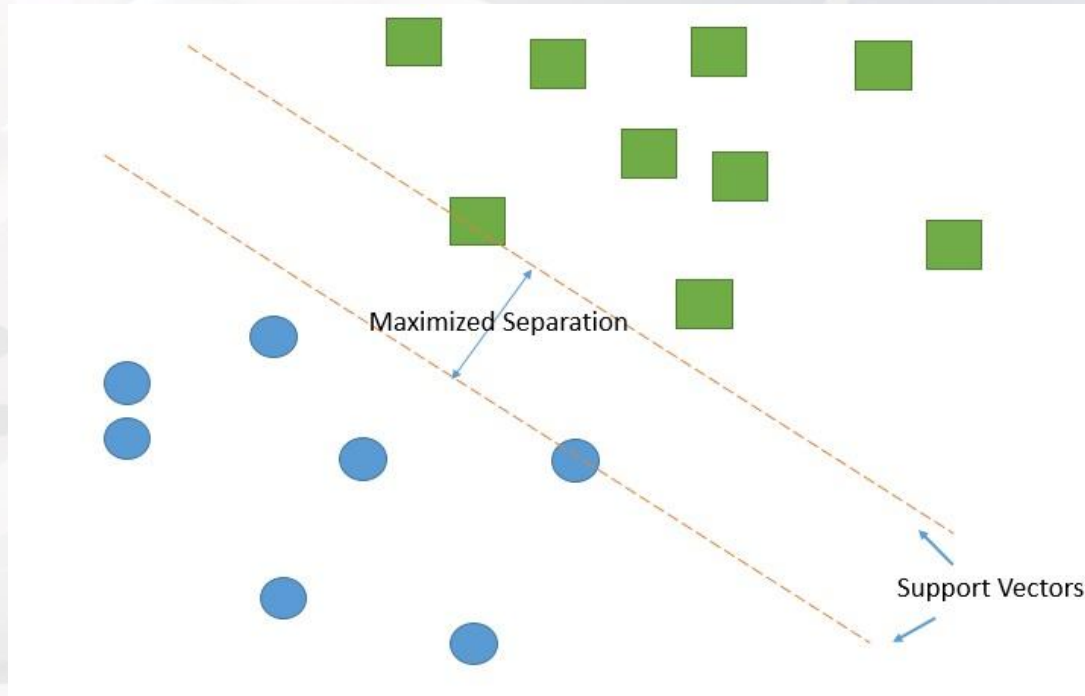
K- Nearest Neighbor



Artificial Neural Networks



Support Vector Machine



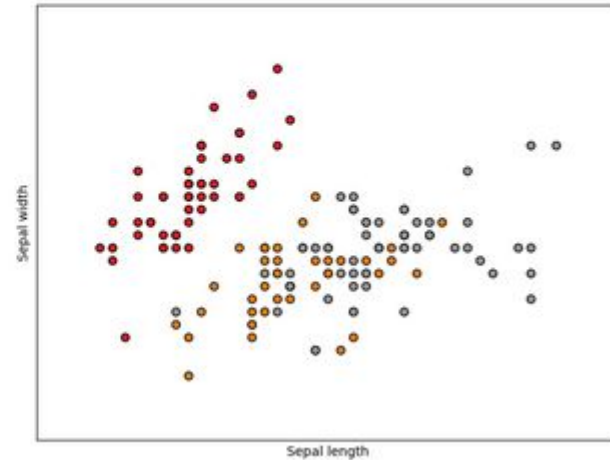
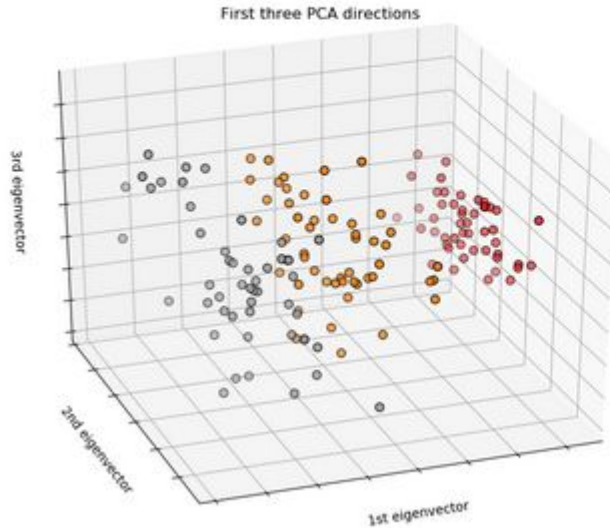
Laboratório

- Python
- Scikit Learn
- Iris Dataset

Iris dataset

The rows being the samples and the columns being: Sepal Length, Sepal Width, Petal Length and Petal Width.

The below plot uses the first two features. See [here](#) for more information on this dataset.



Material

www.danieltozadore.wordpress.com/workshop-ia

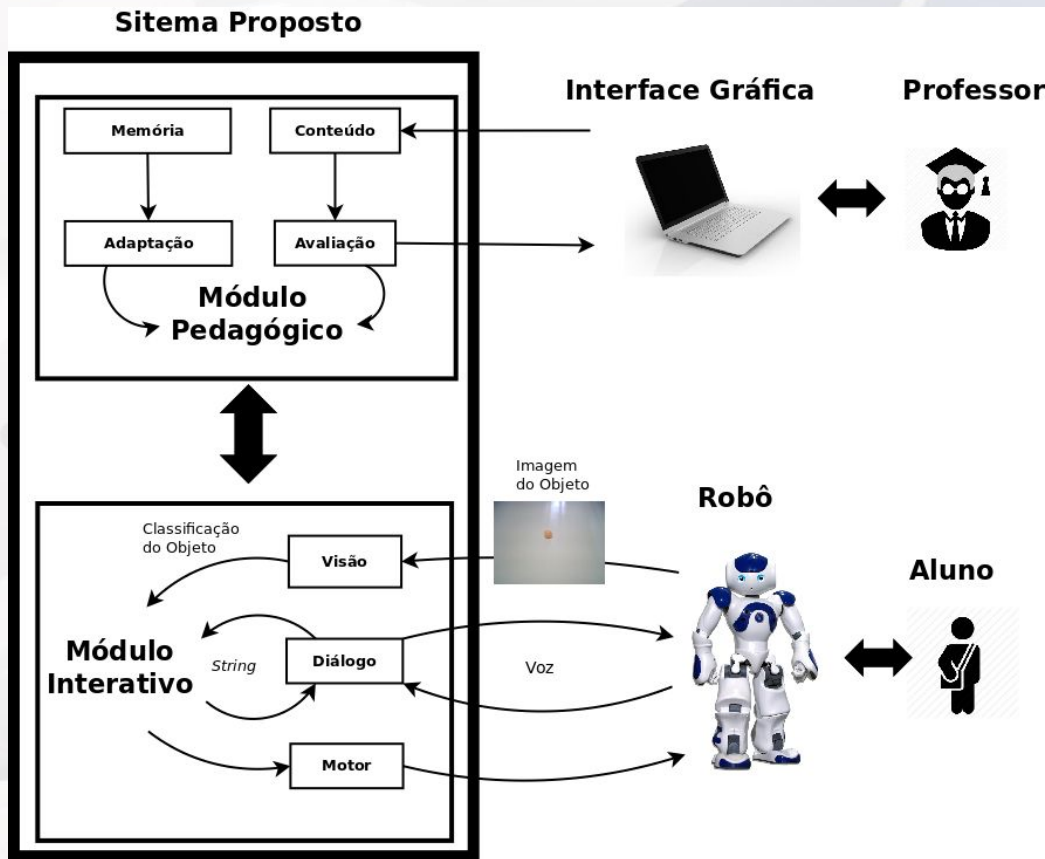
Bonus!

<https://jcaip.github.io/Machine-Learning/>

Exercício?

- Modelar um de seus problemas no espaço de características.
- Qual classificar você usaria? Porque?
- Qual uma possível aplicação para isso?

Meu trabalho





Agradecimentos



Obrigado pela atenção!

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