Lecture 1: General introduction

Introduction to Machine Learning

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L3 MIASHS — Semestre 2

2022-2023

What is Machine Learning ?

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Machine Learning algorithms

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Question

Can you give me some examples of Machine Learning models you have previously studied ?

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We will study both in this course !

Example of classification: handwritten recognition

Example of classification problems include:

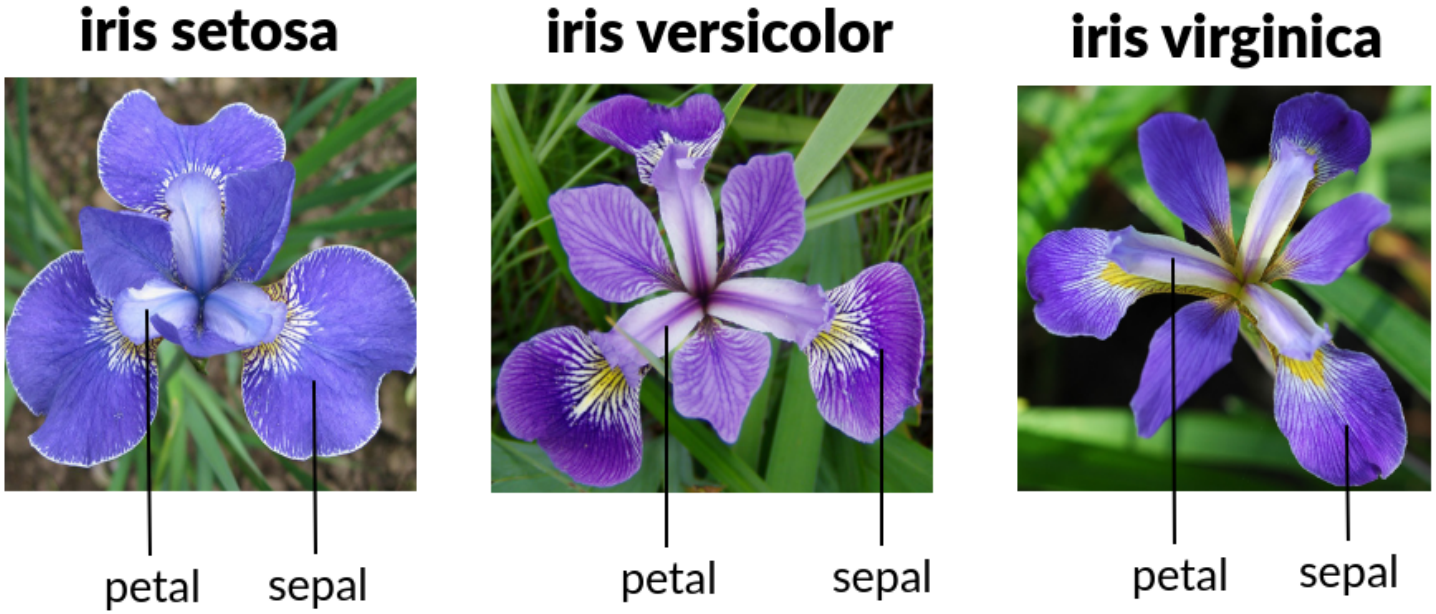
Handwritten number recognition (OCR)

Given pixel repartition, learn to match handwritten numbers with their true value.

Example of classification: flower species recognition

Flower species

Given flowers characteristics, predict their species.



Example of regression: prediction of housing pricing

Price predictions

Given house characteristics (size, location, number of bedrooms), predict the selling prices of houses.

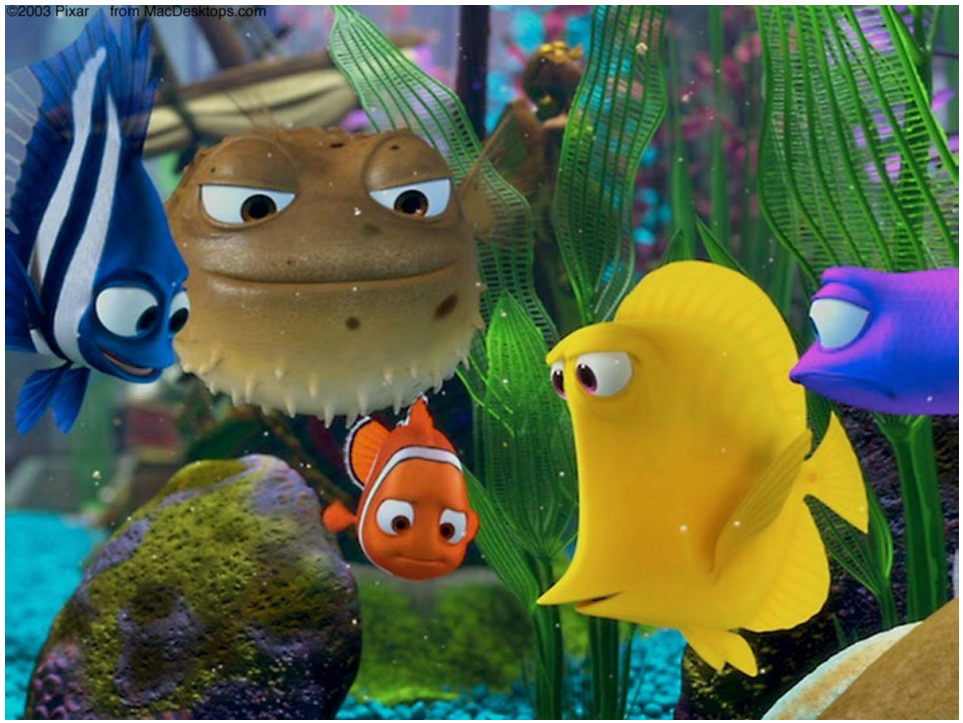
Example of clustering

Infer Netflix watching behavior

Given a set of user characteristics (time spent per day, number of different items watched, number of series and movies), group users into subgroups.

Can you infer the type of problem ?

Given their size, their weight, and their color, predict the fish specie.



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Given their previous results (number of race won, previous times, total training times . . .), predict athletes time in a race.

Can you infer the type of problem ?

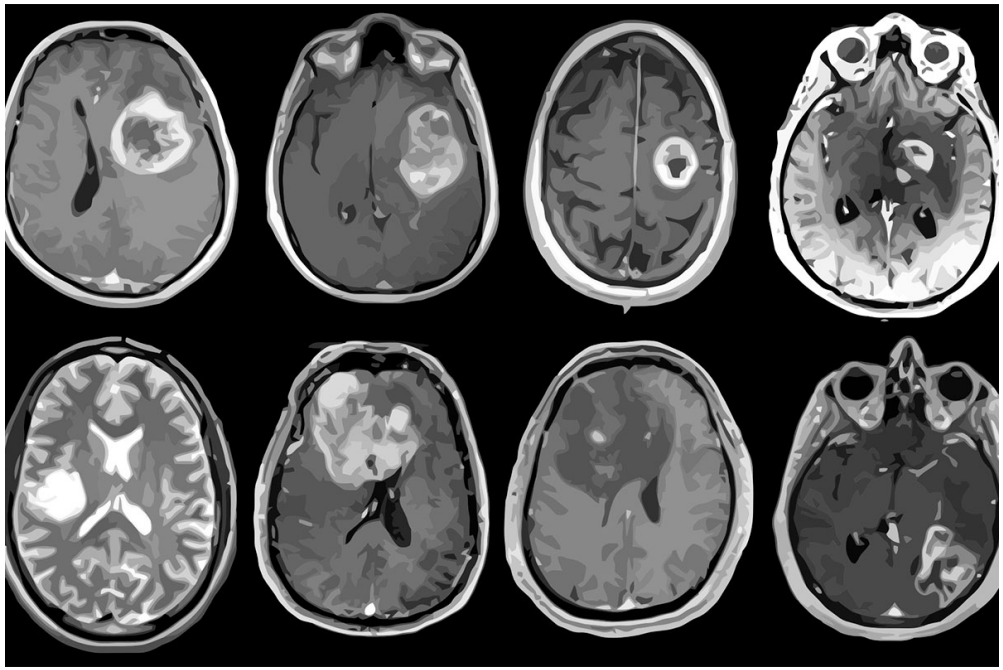
Given their medical records (weight, age, height, smoking status), predict patients with diabetes.

Can you infer the type of problem ?

Given their spending habit (number of bought items, total money spent . . .), identify different shopper behaviors.

Can you infer the type of problem ?

Given tumors characteristics (size, height, width, color . . .), predict if they are cancerous tumors.



Can you infer the type of problem ?

Given baby whales characteristics (specie, location, parents . . .), predict their total adult weights.

Questions ?

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