DIPARTIMENTO
DI INGEGNERIA
DELL'INFORMAZIONE

UNIVERSITÀ
DEGLI STUDI
DI PADOVA

LAB 1: Linear Regression and Classification

Machine Learning 2019
Slides P. Zanuttigh

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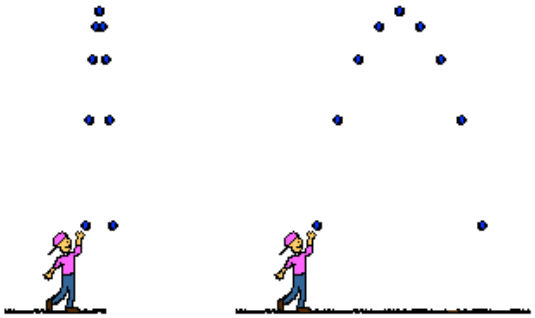
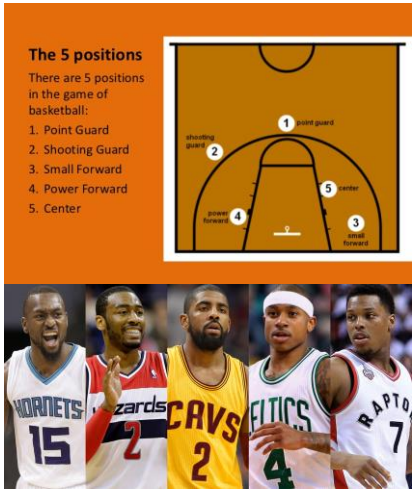
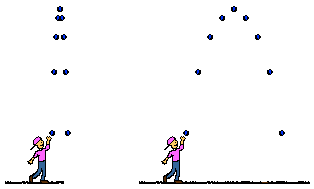
LAB 1: Linear Regression and Classification

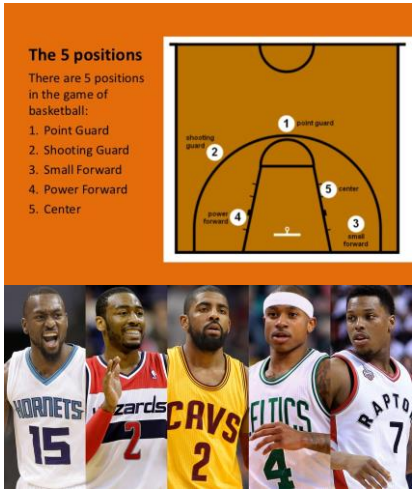
There are 3 exercises:

		
Regression on house prices data	*Polynomial Regression (ball launch)*	*Classification of NBA players role*

LAB 1



see intro lab



Regression:

- Implement least square estimator
- Compare with regression methods in Python libraries
- Perform Polynomial Regression

Classification:

- Implement the Perceptron algorithm
- Use Logistic Regression from Python libraries

Complete the Notebooks

- You have to complete 2 Jupyter notebooks:
  - one for the classification problem (NBA roles)
  - one containing the 2 regression tasks (house prices and ball launch)
- FIRST THING TO DO: you need to put your name and ID number in both notebooks try to change the random seed
  - You can use the ID also as seed for random number generators
- The notebooks have missing code: need to fill in what is missing
- You must write the answer to all the questions in the notebook
- You should also place some text/comments (to explain choices or describe results)
- Feel free to add cells with text if you need to explain or describe some ``non-standard'' decision!
  - But do not change the input data files, they will not be submitted

The Task

- Complete the 2 jupyter notebooks
  - i.e., write the code and answer to the questions
- Check that they run properly from the beginning with the provided data (use the "*restart kernel&run all*" command)
- Save them as `surname_name_id_filename.ipynb`
- Submit on elearning

Timeline

- Wed 30/10 : Homework released
- Wed 6/11: Lab 1 (rooms Te-Ue-Da)
- Sat 16/11: Delivery deadline
- The outcome is an on-off mark (i.e., +1 for the exam mark if the homework is reasonably done)