

Sapienza University of Rome, Italy  
Master in Artificial Intelligence and Robotics  
Machine Learning (2018/19)

## Exercise 6. SVM Regression

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Reproduce and understand the example in

[https://scikit-learn.org/stable/auto\\_examples/svm/plot\\_svm\\_regression.htm#sphx-glr-auto-examples-svm-plot-svm-regression-py](https://scikit-learn.org/stable/auto_examples/svm/plot_svm_regression.htm#sphx-glr-auto-examples-svm-plot-svm-regression-py)

Test other configurations (e.g., 3-degrees polynomial) and different parameters (e.g., sensitivity of the solution to  $C$ ).

Plot the mean square error when varying a numerical parameter (e.g.,  $C$ ,  $\gamma$  for RBF kernel, or degree for polynomial kernel).

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### Learning goals

- Understanding kernel methods
- Understanding model selection and hyper-parameter tuning
- Measure sensitivity of solution wrt to hyper-parameter changes