

Homework Assignment N°3

BML36

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1 Exercise 1: K-CV, under & over-fitting

1.1 Part a

- Under-fitting: The model does not stick enough to the data.
 - not complex enough: this family of models can't represent the underlying model
 - did not learn enough
 - we can say it's under-fitting when both error on data and error on test sample are high
- Over-fitting: The model sticks too much to the data, it won't generalize well on never met data
 - too complex for the underlying model. We try to interpret small changes as if they were representing something but is in reality only noise
 - learned too much from the data
 - we can say it's over-fitting when data error is low but test sample error is high
 - another symptom of over-fitting is also skyscraping high values for parameters of the model