Exercise 6 - Machine Learning II - 2016

Please send your submissions (runnable code, plots and written answers) **via email to weis@ccc.cs.uni-frankfurt.de until Tuesday May 31st 2016**. One submission per student. Prepare to present your solutions in the exercise session. Students that are not able to explain their solutions may not be given credit on their submissions.

# 1  Bayesian Model selection (5 Points)

1. Download the ipython/jupyter notebook for this exercise (FreqBayes5.ipynb)

2. Execute the code, understand the results

3. Generate data from a cubic function, extend the code to also consider a cubic polynomial as model. Provide your programs output as pdf export.

# 2  Bayesian Model selection (5 Points)

1. Explain the difference between model fitting and model selection

2. How are prior probabilities for parameters of certain models chosen?

3. How is the set of models chosen that will be compared?

4. What role does MCMC play in model selection?

5. Why do we not just compare the maximum likelihoods of the models?