Exercises 06: Bayesian Optimization

Content

Please note that all results of each exercise should be included in one PDF file. The group name and the names of the members should be visible in the document.

Exercise 1: Find Optimal Parameters for Regression with Polynomial Features

First, open "Parameter.py". Second, click on "Run Cell". The goal of this exercise is to extend the existing source code so that the algorithm requires fewer steps to find optimal degree of polynomial features (see Figure 1).

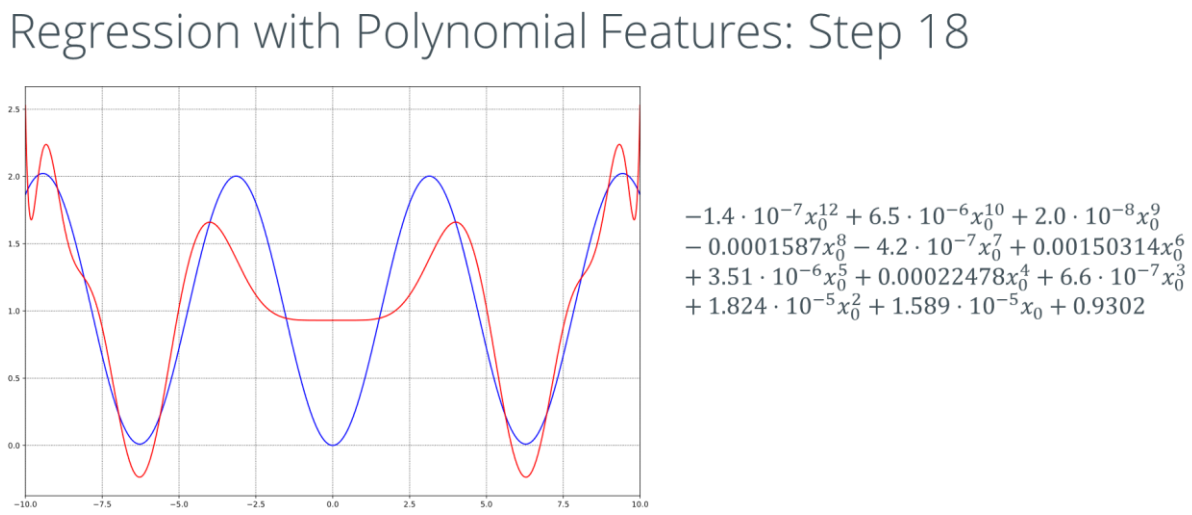

Figure 1: Regression

You should implement a termination criterion and return the optimal degree. Compare the not optimized version (cf. line 67 – line 81) with the optimization (cf. line 83 – line 112). Change and compare the following parameters.

```
x_min = 1
x_max = 20

x_train = sampleX(1, 10000, x_min, x_max)
```

Document the algorithm and the results (cf. Exercises 01: Exercise 3: Algorithm Description of A*). Create exactly one slide for your presentation.