
Lab 4 – Efficient global optimization

Short course on Statistical modelling for optimization

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The aim of this lab session is to get the best possible helicopter.

1 Data

Some data from one of the group is provided, as well as one GPR model. If you are not confident in your data or in your model, feel free to use them.

Q1. A function `EI` returning the expected improvement is provided in the file *ShortCourse_lab4.py*. However, this function is only valid for data that is not noisy. Modify it accordingly using one of the two methods discussed during the lecture.

Q2. Before computing/optimizing the expected improvement on your data, there is one thing you should not forget... what is it?

Q3. Find the point that maximises the expected improvement. The library `scipy.optimize` should be useful.

Q4. Print the corresponding helicopter (check first that it satisfies the constraints).

Q5. Run the experiment and update your model

Q6. Loop over Questions 3 to 5. Do not forget to indicate in your report the best parameters you obtained and the actual recorded time!