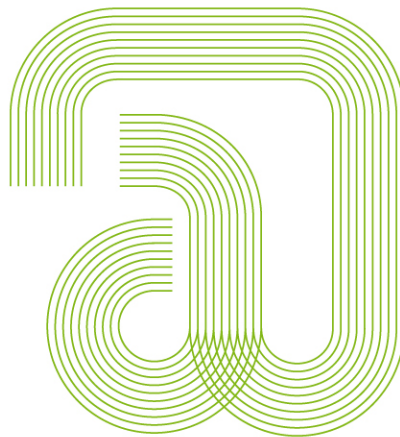


Universidade de Vigo

Evolutionary Computation – Lab-Sessions



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1. First Week

Objectives: Install all necessary packages in python (maybe we will extend the tools in the following weeks). Run the jupyter notebooks to check that everything works. Get some first impressions of how genetic algorithms (and other heuristic algorithms) work on two problems: minimizing a real-values multi-dimensional function, the traveling salesperson problem (TSP).

1. Download all files necessary for this week from the web-page

<http://formella.webs.uvigo.es/doc/ec23/index.html>

of from the corresponding reaching platform available at your university.

2. Install all necessary python components, including the scikit-opt package from

<https://github.com/guofei9987/scikit-opt>

3. Take a look at the web-pages:

a) <https://www.sfu.ca/~ssurjano/optimization.html>

b) <https://www.kaggle.com/code/kooaslansefat/cec-2017-benchmark>

c) <http://comopt.ifi.uni-heidelberg.de/software/TSPLIB95/>

4. Run the jupyter notebooks to check whether everything works.
5. Play around with the parameters regarding: objective functions, genetic algorithm parameters, Monte Carlo rounds, underlying datasets, etc.
6. Generate some statistics output, especially mean and variance, for a certain number of Monte Carlo rounds and genetic algorithm iterations for parameter sets that you found interesting.