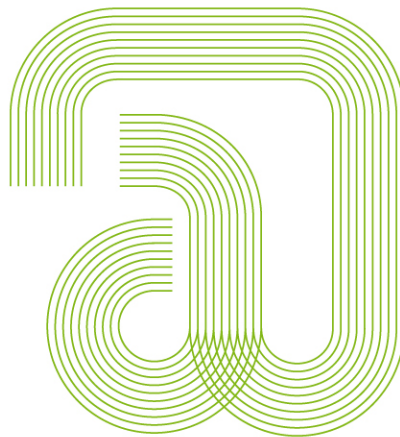


Universidade de Vigo

Evolutionary Computation – Lab-Session 4



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Remind we have changed the due dates for the two homeworks as announced already:

- **February 28th** for the minimization of the real-valued functions and the TSP problem applying genetic algorithms.
- **March 28th** for the topics still ahead...

1. Fourth Week

Objectives: Finish the already started tasks and prepare the deliverable, i.e., homework to be uploaded (on moovi) or sent by email (formella@uvigo.es) til Friday 28th of February.

1. Take a deeper look into the Guofei-package and find out which types of recombination/crossover, mutation, selection, initialization, and stopping criteria, the package implements.
2. Implement and run (using the Guofei-package) the minimization of the Schaffer-function and the (3d- and 4d-) Rosenbrock function with both encodings in a Monte Carlo loop and log the minimum, mean, and variance of the objective function.

Argue why you took the decisions when choosing your parameter set and search region.

3. Use the Guofei-package to find a sufficiently good tour with the genetic algorithm approach, on 10 of the 15 small instances from the TSPLIB given in the accompanying web-page. Compute minimum, mean, variance, and maximum of the objective function (gap) whenever you use a Monte Carlo approach. Compare to the three more simple heuristics (nearest neighbor, quick tour, and improved pair-center tour).

Argue why you took the decisions when choosing your parameter set.

Use a python notebook to implement, execute, and document your homework.