



Prof. Esther Colombini

esther@ic.unicamp.br

<http://www.ic.unicamp.br/~esther/teaching/2020s1/mc906>

Project 2 - Deadline: 15/06/2020

1 Goal

This work aims to apply an evolutionary computing technique to a literature problem chosen by the group. The work consists of finding an adequate solution to the chosen problem, evaluating it according to different parameters. You must clearly define:

- The problem addressed
- The evolutionary model adopted
- Implementation specifics and restrictions
- Variations on parameters
- Fitness function adopted

2 Points to consider

To evaluate the solution of the problem, at least 2 configurations of each of the following parameters must be considered (the mutual combinations of variations are not necessary):

- population size
- stop criteria
- selection technique
- crossover technique
- mutation technique
- replacement method
- mutation rate
- crossover rate

The system must be evaluated according to the quality of the solutions found and a critical evaluation is expected on the relationship between adopted parameters x solution performance. Graphs and tables representing the evolution of the solutions are expected. Additional comparisons with the literature are welcome, although they are not mandatory.

3 Group

The project must be carried out by groups of a maximum of 5 students.

4 Programming languages

The programming language used in the work can be selected by the group, as long as it is compatible and justified in the context of the problem. It is **mandatory** that students **develop the methods without the assistance of specific Evolutionary Computing libraries**. However, the use of general visualization libraries, data structures, etc., is allowed.

5 Report

The definition of the problem, the solution, and the results obtained must be presented in a report created as a Jupyter notebook. Please, make sure you put the graphs, tables, comparisons, and critical analysis in the notebook. The report should clearly indicate what the contribution of each team member was. If your group is programming in another language, you must submit a report with a maximum of 10 pages following the template is available in the course Classroom.

Additionally, the groups should also summarize in one page (converted to pdf) the problem solved and the most significant results achieved.

6 Project submission

The work must be submitted via Google Classroom.