Assignment 3: Exploring Ongoing Researches on Evolutionary Algorithms

1， **Overview**

The main task of this assignment is to explore ongoing researches on evolutionary algorithms, therefore to extend deeper understanding of evolutionary algorithms. This assignment has 100 marks, which will take 20% in your final mark of this course. The mark you get in this assignment depends on the quality of your review report, and presentation.

2， **Task**

You will choose an paper (EA) from the list of recently published papers attached, read and understand the chosen paper, and write a report on it, so that you can explore and understand ongoing researches on evolutionary algorithms beyond the content which are covered in this course.

2.1, Report

A report (in pdf format) must be submitted, named as report.pdf. MSWord and LaTeX templates can be found at https://www.ieee.org/conferences/publishing/templates.html. You should use these templates.

The expected structure is given below.

Abstract

Introduction Introduce what the paper is about and what is its motivation and contributions.

Background Describe the origin of the problem solved in this paper, especially what have been done to solve the problems, i.e, the existing approaches or methods to solve the problem. Please provide at least two previous methods in detail by reading other related papers in literature and describing the algorithms in flowchart, and test/benchmark problems for illustrating the algorithms.

Proposed Algorithm Introduce the proposed algorithm, its flowchart, the test problems for illustrating the proposed algorithm, and the reasoning why it can achieve its claimed contributions.

Implementation (optional) if at all possible, duplicate the experimental work of the paper.

Discussions

You should discuss the strength and potential weakness of the proposed algorithm, and if at all possible discuss any possible way to overcome its weakness to further enhance its performance.

Conclusions

References

Remark: Please be careful with the grammar, spelling and format.

2.2, Presentation

Examples of evaluation criteria are, but not limited to:

Description of the problem: What is it? What are its characteristics? What existing algorithms are there to solve the problem and their strength and weakness? ...

Description of the proposed algorithm: What is it? What are its characteristics? What are its claimed innovation and achievements? ...

Test Problems: How the algorithm was tested?

Comparison and discussion: What existing algorithms it was compared with? Advantages and disadvantages of each algorithm tested, ...

Presentation of the slides: Format, typeset, spelling, grammar, ...

Language and clearness

3， Submission

3.1, What to submit

Report: Each student should submit one single file for the report.

- ✓ A pdf report file named as assignment3-report-studentIDnumber.pdf. Example: assignment3report-12345678.pdf.

Presentation slides Each student should submit one single file for her/his presentation. The submitted file can be of one of the following formats:

- ✓ Assignment3-presentation-studentIDnumber.ppt
- ✓ Assignment3-presentation-studentIDnumber.pptx
- ✓ Assignment3-presentation-studentIDnumber.pdf

3.2, Where to submit

Email your Report and Presentation files to Ms. Honglin Jin (12531321@mail.sustech.edu.cn) and cc Yuhui Shi (shiyh@sustech.edu.cn). The subject of the email should use the format: [CSE5012] Assignment 3 (LastName/FirstName-StudentNumber).

3.3, Important date

Please submit your Report and Presentation files by 10:20 (Beijing time) December 16 (Tuesday), 2025.

Please Note: Late submission will be penalized (25% for each day late)

4, Prohibition

You will get 0 as score for this assignment if any of the following cases happens:

- ✓ You don't respect the naming policy of files.
- ✓ The report/presentation submission is delayed for 3 days (72 hours) or more.
- ✓ Plagiarism.

Contact: For any question regarding this assignment, please email to Ms. Honglin Jin (12531321@mail.sustech.edu.cn). The subject of the email should respect the format: [CSE5012] Assignment 3 (LastName/FirstName-StudentNumber)

Example: [CSE5012] Assignment 3 (Jin/Honglin-12531321)