Neuralminimizer comments

# Reviewer 1

## 1. COMMENT

The authors present a topic of interest, the search for the global minimum of the multidimensional function with applicability in Machine Learning, using an RBF type neural network. From a mathematical point of view, the proposed algorithm is proven and stable, but which Machine Learning model is proposed?

## RESPONSE

## 2. COMMENT

I recommend the authors to exemplify the proposed Machine Learning model (diagram) because the RBF neural network has been used in the specialized literature for such applications.

## RESPONSE

(Na ginei diagrama tis methodou)

## 3. COMMENT

Possibly the authors should propose in the article an applicability for the proposed algorithm, possibly jointly with other topics on this topic in the literature, so that the performance of the proposed algorithm on a certain topic results, not only mathematically at the demonstration level.

## RESPONSE

1)Na prosthesoume anafores stin bibliografia

2)Efarmogi se ekpaideysi neuronikou diktyou

# Reviewer 2

## 1. COMMENT

It is recommended to review the abstract and highlight the novelty and findings of this study. A summary of the proposed method is needed.

## RESPONSE

## 2. COMMENT

Contributions of this study should be listed at the end of the introduction. The importance of this study should be stated in the introduction, which can answer the following question: Why is this new algorithm needed, and what are the strengths of this new algorithm than the existing algorithms?

## RESPONSE

## 3. COMMENT

This study suffers from a lack of literature review of the problem of this study. It is recommended to add a related work section. Accordingly, the literature should describe the advantage of the proposed algorithm over other metaheuristic algorithms such as QANA: Quantum-based avian navigation optimizer algorithm, Starling murmuration optimizer, DMDE: Diversity-maintained multi-trial vector differential evolution algorithm for non-decomposition large-scale global optimization, and An improved moth-flame optimization algorithm with adaptation mechanism to solve numerical and mechanical engineering problems.

## RESPONSE

## 4. COMMENT

It is recommended to check the upper and lower cases in the whole manuscript. For example, 2.1 Rbf preliminaries.

## RESPONSE

Done.

## 5. COMMENT

Figure 1: A plot for the Gaussian function is needed?

## RESPONSE

Removed.

## 6. COMMENT

It is recommended to consider the detail of the test function in the appendix.

## RESPONSE

The test functions have been moved to the Appendix A.

## 7. COMMENT

The visualization of this study should be boosted. The convergence curve, box plot and etc are recommended.

## RESPONSE

Comparison between the different global optimization methods is added using boxplots.

## 8. COMMENT

The proposed algorithm was compared with PSO and Genetic. It is not clear how the Genetic algorithm as a discrete optimizer behaves to solve a continuous problem, and more detail is needed.

## RESPONSE

(Den einai discrete einai doublepop. Prepei na to grapso edo gia na to katalabei)

## 9. COMMENT

Comparing the proposed algorithm with the well-known and recent optimizers is suggested.

## RESPONSE

The method was also compared against the Differential Evolution (DE) method.

## 10. COMMENT

Experimental evaluations have not supported the claims of this study. Please clarify and boost this section.

# Reviewer 3

## 1. COMMENT

I suggest that title should be changed: Neural Minimizer - a novel method for global optimization (I think that last 4 words are not necesary).

## RESPONSE

Done.

## 2. COMMENT

Abstract is OK, sufficient. I would change last two words in abstract, instead "optimization techniques are extremely promising put "optimization techniques are shown".

## RESPONSE

Done.

## 3. COMMENT

IN section 2

* row 90, Rbf should br RBF
* row 92, instead "Where" to put "where"

## RESPONSE

## 4. COMMENT

In section 3: I do not understand why section 3.1 and listing of so many functions. Is it possible that those function are introduced as references in some other papers? Or if not, then to explain hem a little bit better (or to put citation with each of them)?

## RESPONSE

The test functions have been moved to the Appendix A.

## 5. COMMENT

I do not understand notation [-100,100]2  What means red number?

## RESPONSE

Maybe a typo from the MDPI latex.

## 6. COMMENT

I do not understand Table 3, what is in it? Which algorithm is used?

## RESPONSE

The caption in table have been changed to the following:

“*Experimental results for the proposed method and for different values of the critical parameter N\_S (50, 100, 200). Numbers in cells represent averages of 30 runs.*”

## 7. COMMENT

I suggest (not obligatory) reorganization of section and subsections, instead:

3. Experiments  
    3.1. Test functions  
    3.2. Experimental results

to be just

3. Experimental results

## RESPONSE

Done.

## 8. COMMENT

I have to admit that I still do not understand purpose of this paper. I do not see clear what are new results. If it is an algorithm (i suppose), then it should be shown a little bit more explicit. Maybe to add some analyses after tables 2 and 3, to explain why results are better, what is main contribution of new algorithm.

## RESPONSE

1) na balo to motivation apo to introduction

2)Comparison between the different global optimization methods is added using boxplots.