Review Form 1.6

Journal Name:	**Journal of Advances in Mathematics and Computer Science**
Manuscript Number:	**Ms_JAMCS_78984**
Title of the Manuscript:	**Probability density functions for prediction**
Type of the Article	**Original Research Article**

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty'**, provided the manuscript is scientifically robust and technically sound.
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PART 1: Review Comments

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Compulsory REVISION comments	**First and foremost, the suggestion of using another distribution when the actual distribution is known is a dangerous one. A model should always preferably be derived from the underlying knowledge regarding the phenomena being modeled. This is the most logical and sound approach to modeling and should never, in any circumstance, be sacrificed to achieve a better fit regarding any goodness-of-fit measure, such as likelihoods, variational likelihoods, sums of squares, AIC, BIC, and similar ones. Only in the advent of being impossible to derive a specific distribution should we resort to other methods. This is central and should be clearly addressed in this paper. I, myself, have published a paper recently in which I use an algorithm to generate probability distributions to fit specific data sets and they achieve a higher likelihood than the model used to generate the data. The algorithm even presents us with mathematical expressions for the densities of such distributions that are very concise. This is not a recommendation, by any means, that such an algorithm should be used when the underlying distribution can be known. Doing so is simply unscientific. The paper entitled "Can Data Recognize Its Parent Distribution?" by Marshall, Meza and Olkin (2001) deals with this issue. We have seen many papers that even utilize p-values from goodness-of-fit tests such as the Kolmogorov-Smirnoff and Anderson-Darling tests as a metric to recommend a distribution over a set of others and this is really nonsense. I cannot emphasize it enough: we should never use any distribution other than the one known to be the one derived from the phenomena being studied.**	
Minor REVISION comments	Readers will benefit from tables presenting and comparing the results between models in conjunction with the level curves presented. Readers will also benefit from a comparison with non-parametric methods that assume no underlying distribution. No distribution with heavy tails was presented and that is also critical. Last, the paper needs more references and a discussion on overfitting issues. My suggestion is that this issue presented in this paper, that of data being better predicted by distributions other than the one that generated the data, be presented more as a curious phenomenon rather than a recommendation.	
Optional/General comments	My overall opinion of this manuscript is positive, in the sense that it would appeal to a large number of readers of the journal. However, I have to point out several serious issues with the whole subject and the presentation of the manuscript. Therefore, I recommend the manuscript for publication after major fundamental corrections. Furthermore, I enjoyed the reading.	

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PART 2:

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

Reviewer Details:

Name:	***Luis Gustavo Bastos Pinho***
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