Subject: Revision request to Med2015031
From: AIMS Medical Science (medsci@aimspress.com)
To: hjelinek@csu.edu.au;
Cc: jemal.abawajy@deakin.edu.au; david.cornforth@newcastle.edu.au; kowa@unimelb.edu.au; michael.negnevitsky@utas.edu.au; morshed.chowdhury@deakin.edu.au; rkrones@unimelb.edu.au; andrei.kelarev@gmail.com;
Date: Thursday, 29 October 2015, 12:25

Dear Dr. Jelinek,

Hope all is well with you.

Thank you very much again for your submission to our journal AIMS Medical Science.

Enclosed you may find the reviewers’ comments.

(1) Please revise according to the referees' comments, and provide a response letter to explain the details of the revision and the response to referees' comments one by one.
If you do not agree with some comments from the reviewer, please also provide your response.
(2) Please return the revision within 12 days. If you need more time to complete the revision, please let us know the approximate time you may resubmit.

The manuscript will be sent back for review to the original reviewers and you must therefore address the concerns thoroughly.

In case of any questions you have, please feel free to let us know.

You could send your revised version to me by email.

Looking forward to receiving your revised manuscript in due course.

Kind regards,

YL Zhao
Assistant Editor
AIMS Medical Science

http://www.aimspress.com/journal/medicalScience

Email: medsci@aimspress.com

Attachments

3rd reviewer comments.docx (12.63 KB)
reviewer comments 10.15.docx (13.01 KB)

Comments for authors

This is an excellent submission. The authors use a wide variety of MLA approaches to classification of CAN patients based on clinical parameters. I have only minor comments such as on page 7 where they mention that 20 repetitions of 10-fold CV were used it may be helpful for readers to mention that the experimenter function in Weka was used (if that is how they did this) since experimenter can automatically repeat the process while explorer requires the investigator to manually re-run each 10-fold CV.

I thought that the application of the Rényi entropy provided very interesting results and this paper contributes to the development of our understanding of the complex patient with CAN.

Novelty

Excellent

English performance

Excellent

Conclusion	Accept this manuscript
Date Invited	8/20/2015 11:27:46 PM
Date Completed	10/21/2015 12:16:17 PM

First reviewer's comments:

Comments for authors

I congratulate the authors for their best work. I am very much pleased with article and its presentation. It will be still better if you can add few more studies related to it and explain how your work differs from them. And it will be still more better if you mention the limitations of study if present.

Comments for editor

Nil

Detailed Evaluation:

Novelty:Average

English performance:Excellent

If you want to review the revised version?:Yes

Conclusion: Minor revision

Second reviewer's comments:

Comments for authors

The authors have submitted a another in a rather long list of publications that have many overlapping themes including Renyi Entropy, cardiac autonomic neuropathy (CAN), and the DiScRi database of 138 20-minute EKG recordings. The new twist in this paper is a comparison of variety of classifiers and feature selection methodologies using the publicly available WEKA software packgage. By all accounts, all HRV measurements made for this study were part of previous studies so the main contribution of the paper are results that compare the different methods. This is not entirely without some value but does not rise to the level of enough additional work to merit a new publication in my opinion.

There are other important issues with the paper in addition to the overlap with previous publications

1) The ROC areas of the various methods are presented without any confidence intervals and no statistical analysis (i.e. p-values) of significant differences is attempted. Just because Method A has ROC area of .9 and Method B has ROC area of .85 doesn''t mean A is statistically better than B (especially with such a small sample size). Also, it is not clear how ROC is calculated for 3 or 4 classes?

2) The fact that a form of Renyi Entropy was in 10 of the top 15 selected HRV features is not surprising given that 50 variants of parameters were calculated. No doubt if 50 different ways to estimate the second moment were tested these would dominate the list. Only one version of SampEn and ApEn was used and 50 versions of these could be tried as well.

3) No graphs of the raw data are presented to indicate what a low or high value of, say, Renyi(16,-1), actually looks like. Renyi entropy with alpha=1 (Shannon entropy) and alpha=2 (quadratic entropy) have some concrete meaning. All others are more of black box statistics that would be very difficult to explain to clinicians and mathematicians alike. For this reason, only Renyi(1,1) in table 3 makes any sense to me.

4) It is important to note that Renyi entropy is not Renyi entropy rate which is what SampEn and ApEn measure. In fact, quadratic sample entropy (QSE) described in reference [35] is actually related by QSE=Renyi(2,2)-Renyi(1,2). References about Renyi entropy and heart rate gaussianity as well as entropy estimation using kernel densities should be studied or at least acknowledged by the authors.

Comments for editor

There is a lot of overlap of this work with previous publications by these authors and I would be inclined to recommend not accepting on this basis alone.

Detailed Evaluation:

Novelty:Average

English performance:Excellent

If you want to review the revised version?:Yes

Conclusion: Reject this manuscript