Submission's Reviews for the ISWC 2015

Miguel Angel Perez-Xochicale

28 May 2015

1 mail

Dear Miguel Angel Perez-Xochicale.

We are sorry to inform you that your submission 208: "Dexterity Assesment for Salsa Dancers Through the Time-delay Embedded Phase Space Representation" has not been accepted for publication at ISWC 2015 Papers, Note and Brief.

121 papers were submitted to ISWC 2015 Papers, Note and Brief, of which 14 (8 conditionally with shepherding) have been accepted as long papers, 16 as short papers (13 conditionally with shepherding), and 9 as brief (7 conditionally with shepherding). The preliminary acceptance rate for oral presentation is 25%.

We hope these will be helpful in revising your submission. We would like to thank you for submitting your work, and in spite of the negative outcome on this occasion, we do hope that you will continue to keep ISWC in mind when reporting your work in the future.

Kristof Van Laerhoven and Tsutomu Terada ISWC 2015 PC Co-Chairs

1.1 Feedback from Program Committee Meeting

Dear Autors of "Dexterity Assesment for Salsa Dancers Through the Time-delay Embedded Phase Space Representation", Thank you for your submission to ISWC 2015. Although your submission contains an interesting application, the review committee critically discussed your paper and decided to reject it. The reasons are detailed in the individual reviewers' reports. Globally, the following points were the most relevant for the final decision:

- The study has important d (number of subjects low, evaluation limited), the method is not well motivated and is not directly transferable to other applications.
- The innovation is small compared to other contributions that have been submitted to ISWC.
- As a minor point, the writing is hard to comprehend sometimes and needs to be tidied up.

We would recommend to work on the above mentioned deficiencies and to then resubmit your paper to another conference.

2 Review 1

2.1 Confidence

3 (Very confident - I am knowledgeable in the area)

2.2 Contribution to ISWC

Contribution to ISWC

The paper presents a methodology for dexterity assessment of dancers using inertial measurement data and dynamical system analysis. The paper presents a very interesting application, but for a limited audience. In terms of "raising the bar" regarding the paper's method for Human Activity Recognition, the contribution is not sufficiently high to make a substantial contribution there.

2.3 Overall Rating

Overall Rating

2 (Probably reject: I would argue for rejecting this paper.)

2.4 The Review

The Review

- Very interesting application
- Small audience interested in the main application
- Method not directly transferable to other application domains, this should be discussed
- Contribution also does not sufficiently "raise the bar" in activity recognition
- Evaluation is rather limited - it is hard to argue differences in skill level based on data from just one person in each group, there has to be a substantial extension of the data collection

3 Review 2

3.1 Confidence

3 (Very confident - I am knowledgeable in the area)

3.2 Contribution to ISWC

The paper's aim is to recognize the experience level of salsa dansers - the aproach proposed is based on "time-delay-embedded-phase-space"

3.3 Overall Rating

2 (Probably reject: I would argue for rejecting this paper.)

3.4 The Review

After reading the paper it is not quite clear to me what the major scientific contribution of the paper is supposed to me. In the following I list the issues I have

- overal the paper is not well written. In fact is rather verbose and given the content the paper should have been at most a 4-page submission
- the term "dexterity" seems not what is done - at least not from my understanding of the english word - I would suggest a different word like "level of expertise".
- the experiments are anecdotal at best - it starts with the fact that for two of the three "expertise levels" there is one person each making the entire experimental results questionable. Additionally only qualitative results are shown making it entirely unclear if the approach is sensible or not.
- additionally, from the writing it is not clear to me if there is any novelty in the approach using the time-delay embedding matrix - maybe there is novelty - it is not made clear what the authors claim here.

So the only conclusion I can draw at this point that this preliminary version of the work (and writing) cannot be accepted as is. Also - unfortunately - the authors violate anonymity rules in two ways: (1) they are are hiding authors / title of a reference of own work [25]. There are clear instructions on the iswc-page that are clearly violated by this http://www.iswc.net/iswc15/calls/authorguide.html (section "Anonymous submission process") (2) additionally they also give non-anonymized acknowledgements...

4 Review 3

Title: Dexterity Assesment for Salsa Dancers Through the Time-delay Embedded Phase Space Representation

4.1 Confidence

4 (Highly confident - I consider myself an expert in the area)

4.2 Contribution to ISWC

The paper discusses the potential for the dexterity assessment for salsa dancers. The authors present a sensing technique to distinguish the different level of the dexterity and show its feasibility through the sensor data collected from 3 salsa dancers.

4.3 Overall Rating

3 (Maybe reject: I would agree with rejecting this paper.)

4.4 The Review

The authors tackle an interesting topic, assessing the dexterity for salsa dancers. To this end, they develop a sensing technique using time-delay embedded series data. To show its feasibility, they collected the sensor data from 3 salsa dancers with different dexterity and described the phase space representation.

One of my major concerns about the paper is its evaluation. First, the authors do not evaluate the end-to-end performance of the proposed sensing technique. With the collected data, they showed the intermediate results, cumulative energy percentage and 2-D reconstructed state spaces and their different pattern according to the dexterity, i.e., non-dancer, intermediate, and expert. However, the authors do not address the classification logic that classifies the final level of the dexterity, i.e., how the proposed solution finally recognizes the dexterity with the data. They do not evaluate the accuracy of the dexterity assessment. Second, the data set is too small to show the validity of the proposed technique. Since the authors used the sensor data from one participant per the dexterity, it is doubtful whether the data well represents the general dexterity of real dancers. Also, It was suspicious why the authors used only one non-dancer data although they collected the data from 11 non-dancers.

Due to lack of detailed explanation and examples, it is difficult to understand how the proposed sensing technique operates. The authors present a number of terms, equations, and algorithms, but it is not easy to

figure out how the algorithm works specifically, e.g., how the data is segmented, how the parameter values are determined, and how the dexterity is finally obtained.

While the proposed idea is interesting, the need for the proposed technique is not well motivated throughout the paper. I think it would not be difficult for people to manually determine the dexterity of salsa dancers. What is the expected benefit of automatically detecting the dexterity? The paper would be stronger if the authors describe the motivating scenario of the proposed technique.

5 Review 4

5.1 Confidence

3 (Very confident - I am knowledgeable in the area)

5.2 Contribution to ISWC

This paper presents a useful application of wearable computing, which highlights its real-world implications. The paper, joined with other research work, demonstrates promising benefits that wearable devices can create for human.

5.3 Overall Rating

3 (Maybe reject: I would agree with rejecting this paper.)

5.4 The Review

This paper presents an approach to assess the dexterity of salsa dancers. Different from activity recognition, it aims to obtain more information to identify how well an action is performed. Clearly this research question is of interest to the community. The authors did solid work conducting the experiment. The presentation is clear.

This paper has several weaknesses. First, it concentrates on a method called time-delay embedding. The motivation of using this approach is not strong. From the paper, we cannot see the necessity to apply this method. It would be better to compare the proposed approach with some existing methods and hopefully reveal performance advantages. The contribution is limited if the paper is about taking a new approach to an existing problem. The authors may want to provide elaborate more on why this method can outperform existing approaches and thus valuable to this problem.

Dexterity of individual users can be complex. This paper takes a simplified model based on pattern matching. Additionally, sensory pattern of dexterity can be different on different performers due to different height, weight and so forth. In this case, it will be difficult to have a unified metric that would fit for different performers. It would be interesting to have several experienced dancers act like novices. We can see how the method and metrics work on individual performers. Also, more information about ground truth would help readers better assess the results.

Overall, this paper presents interesting questions and a solid experiment. It still suffers from some weaknesses that worth refinements.