Title and author of the paper
Optimizing Stimulus Presentation for a Spatial Auditory P300
By Nicholas Boldt & Shadi Sartipi

Summary of the paper
This paper is focused on optimizing stimulus presentation for user intention estimation via electroencephalogram. In general, the authors use unique sound images from different directions to train and optimize the existing auditory P300 speller. To achieve the goal, the authors first apply high and low pass filters to do data preprocessing. Then, feature extraction and a statistical feature selection process is introduced. After that, SVM and CNN are employed as classifiers.

Good things about the paper
The researching problem and the proposed method are clearly illustrated in this paper. It is a good idea applying machine learning algorithms on existing research problems to better the system performance. The process of machine learning is also standard and statistical.

Major comments
In the first paragraph of the introduction part, the authors mentioned that the brain-computer interface can help people who lost their typical means of communication. Then, several EGG brain activity patterns and P300-based BCI speller are introduced. Later, in the fourth paragraph of the same section, the idea in the first paragraph is addressed again and further explained. This arrangement kind of diminishes the logical coherence of this section. Maybe a rearrangement is needed here.

In the following paragraph, which the fourth paragraph of the introduction part, it is mentioned that P300-spellers typically present individual stimuli sequentially, which is inefficient. Further explanation on why it is slow would help the readers.

After that, the authors write two paragraphs to list some recent works. It is great that the timeline and the methods proposed by these previous researchers are clearly presented. But there is no analysis of the strength and weakness of these existing models, nor comparison on methodology and performance between different approaches. This kind of summary is important for stating the significance of the proposed model. The authors may consider adding some.

Lastly, it is a little bit strange to have the experimental design part right after the introduction part. And, the algorithm description of the paper is not presented as an individual part, instead, it is reported in four subsections after the experimental design. It is clearer to me if data preprocessing, feature extraction and selection, classification part are combined and presented as a dependent section, and have the experimental design part after them.

Minor comments
1. For the first sentence of the third paragraph of the introduction part, there is no subject. Maybe the authors missed a comma after the speller?
2. In the fourth paragraph of the introduction part, in the sentence right after [5], maybe the authors want to add a comma after 'however'.
3. It would be better if the authors can add some further explanation of the points in figure 1.
4. Figure 2 & 3, no units or explanation of the numbers.