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Drinking Water
Engineering and Science
Discussions

Interactive comment on "Raspberry Pi based Smart Sensing Platform for Drinking Water Quality Monitoring System: A Python Framework Approach" *by* Punit Khatri et al.

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Dear Reviewer 1, Thank you for your valuable comments on this work which helps us to improve our revised manuscript quality. Reply to Comments Referee Comment: In this paper a Raspberry Pi based Smart Sensing Platform is described, including Graphic User Interphase and a Fuzzy Inference System modelled in Python for drinking water quality monitoring. The topic is of importance since on-line water quality monitoring is emerging and dash-board like applications to inform operators and support them in decision making is becoming relevant. However the presented paper is rather superficial mainly describing the system and not the advantages in terms of operation. Especially

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Discussion paper

because the application is about monitoring of groundwater quality that does not vary much in time and, therefore, is not the most indicated example to test such an on-line system. General comments: - Avoid starting abstract and introduction with very general statements on the “global water crisis” Author Response: General Statements have been removed and the Abstract and Introduction is updated.

Referee Comment: It is not clear if the application is about groundwater quality (page 2, line 1) or drinking water quality (after treatment of groundwater, page 2 line 24). Author Response: The application is about drinking water quality after treatment. The same has been corrected in the introduction. (Page 2 line 8)

Referee Comment: The choice of the sensors seems more practical than related to e.g. health issues. More explanation of this should be given. Author Response: currently we have not focused on sensor selection. We are focusing on the parameter selection which are related to health issues.

Referee Comment: More explanation of the reasoning behind the “post-processing” should be given (as described on pg 4 and in figure 5). In principle drinking water is “good” when all parameters are in the specification or “unsatisfactory/bad” when at least one is out the specifications. Author Response: If the water quality is monitored before post-processing, many of the parameters will be out of the permissible range and there is no significance of this work. In case if a parameter is on the lower and upper edge of the permissible range, this will have the same affect as the unsatisfactory/bad quality of the parameter. The same has been mentioned in the manuscript. (Page 3 line 3-5)

Referee Comment: Avoid copying figures and tables from others sources (such as figure 1-5,; table 1) Author Response: The data in table 1 is freely available in the CPCB website open for user and the same has been properly cited. Figure 1 is also open source and properly cited. Figure 2 has been removed. Figure 3 the standard triangular membership function and is redrawn in Microsoft Visio. Also, all the parameters have

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been taken different. Figure 4 has been corrected and updated. Figure 5 is taken from the MATLAB fuzzy model which was used to validate the fuzzy model implemented in the python. The same has been updated in the section 4.3 validation and performance comparison. (Page 6 line 28-29)

Referee Comment: Check language including tenses: present tense when general, past tense when part of own research Author Response: Checked and Corrected.

Referee Comment: Avoid repetition: explanation in materials and methods should not be repeated in results and discussion Author Response: Checked and Corrected.

Referee Comment: Give more emphasis on the results and discussion: how do the results relate to other methods/literature, what is the advantage/disadvantage of the implemented system; what is missing and what is the way forward, etc. Author Response: All these suggestions have been taken into correction and manuscript has been updated.

Referee Comment: Specific comments: - Pg1, line 7-9, delete sentence (not relevant here) – Pg 1, line 11, 12, 13, “is” = “was” (check rest of paper too) – Pg1, line 17-19, delete sentence (not relevant here) – Pg1, line 21-22, delete sentence (not relevant here) – Pg 1, line 25, “chlorine” = “chloride” – Pg 1, line 29, “Therefore: : :.” Not clear what is meant, so rephrase. – Author Response: Checked and Corrected in the complete paper.

Referee Comment: P2, line 6, explain the reasoning behind the guideline..- Author Response: Explained in the section 2.1.

Referee Comment: Pg 2, line 15-17 check referencing (only last name first author, e.g.Jinturkar et al. (2010) and Icaga (2007) have: : : - Author Response: References have been updated.

Referee Comment: Pg 2, line 15, check parentheses. – Author Response: Corrected.

Referee Comment: Pg 2, line 25, this is a totally wrong statement! Not all water with

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e.g. high or low DO content contains e.g. nicotine: : : - Author Response: Corrected and updated in the manuscript in the materials and methods section.

Referee Comment: Pg 3, line 7 “produce” = “produces”. – Pg 4, line 6 “systam” = “system” – Pg 5, line 2 check parentheses. – Pg 5, line 24-30, repetition of materials and methods – Author Response: Corrected and updated.

Referee Comment: Pg 6, line 8-11, this should be the major message of the paper. What can we conclude, how does this relate to other work, how we can use the system e.g. for error detection? Author Response: The suggestions have been taken into consideration and updated in conclusion section.

Please also note the supplement to this comment:
https://www.drink-water-eng-sci-discuss.net/dwes-2018-35/dwes-2018-35-AC1-supplement.pdf

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