Review of: "Optimized Material Removal and Tool Wear Rates in Milling API 5ST TS-90 Alloy: AI-Driven Optimization and Modelling with ANN, ANFIS, and RSM"

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Potential competing interests: No potential competing interests to declare.

This is an interesting piece of work where the authors discuss using three machine learning techniques to optimise material removal rates and tool wear for milling API 5ST TS-90 Alloy. Before this work can be accepted for publication the following needs to be addressed:

Page 4 the sentence “However, the predictive modelling of MRR and TWR in milling using combined intelligent models such as ANFIS, ANN, and RSM has not been reported ….you need to add ‘before’ on the end to give the full meaning.

Right at the end of Section 1 – you mention 3 models – which 3 models? Also you need to introduce what the rest of the paper will discuss at the end of the Introduction.

Section 2, first paragraph you mention ZX6350C, what is the manufacturer of this?

Also, in same paragraph there is ‘avoid wobbling’ please use more technical language than this.

Table 2, use correct notation for exponential component not ‘7.4E8’

Sub section 2.1, 2nd paragraph there is too much irrelevant depth of information please revise.

Figure 1 very poor and out of focus – this needs to be revisited?

Just above Figure 1 – there is a lot of depth but no mention of the type of sensors and DAQ system used?

Just below equation 3 – what is the uncertainty of the TWR – any parallax error with the discussed method?

Sub section 2.2 – is ANOVA really a ML technique ?

Sub section 2.2.1 20 tests are very low, how much repeatability do you have ?

Explain the 5 levels of experiments for CCD (+1 and -1) this is not clear?

Sub section 2.2.2 it’s not necessary to put ‘The Mathworks Inc’ – reference should suffice

Talk more about these 20 data sets – how much data is within 1 data set?

Equations 10 – 12 could be referenced in as these are standard equations – unless you really need them to explain something novel?

The neuro fuzzy tool à more specific information required.

Equation 23 – what are the variables – introduce them below Equation 23.

Figure 4 – it is not clear what are A, B and C ?

Please elaborate on the sensitivity analysis ?

What method was used to fit equation 28?

You mention validation sets – exactly how much data was this ?

Using the trial and error approach – was this done automatically or manually ?

Looking at Table 6 where training is 14 and validation 3 and Testing 3 samples – this seems very small indeed?

Figure 17 – the data does not look like its fit at all, what is your comment to this?

Figures 18 and 19 – could you put some numerical data to make more sense – very hard to follow both of these. It needs more data.

The paragraph before Section 3.4 it states a 100 epochs yet in Figure 17 its 7-9 epochs?