

## Supplementary Material:

### Shapley value-based approaches to explain the quality of predictions by classifiers

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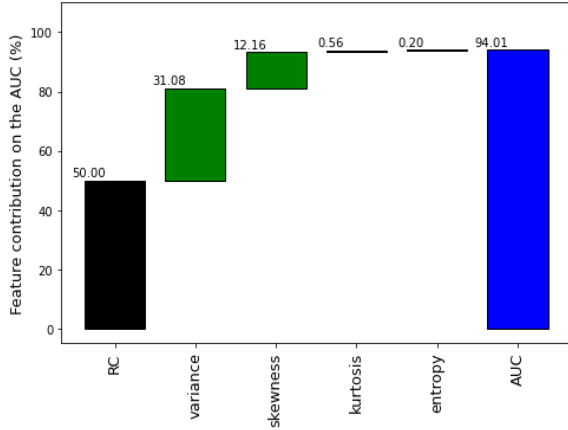
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# Supplementary results

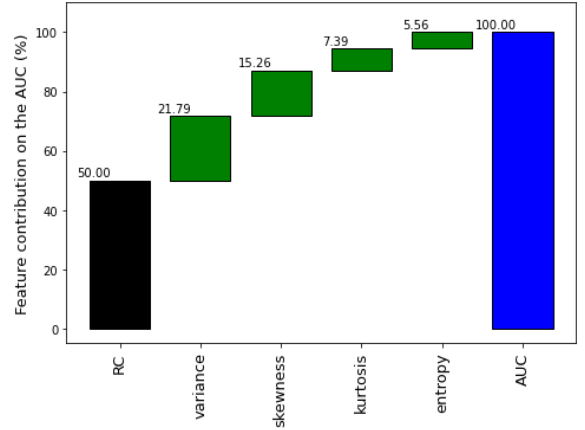
## 1 Comparison with vanilla Shapley value

In this supplementary material, we compare our approach with the vanilla Shapley value, i.e., the feature contributions towards accuracy (with a fixed threshold of 0.5). Figure 1 shows the obtained results. In Figure 1a, we present the contributions by using our proposal. Note that the contribution of *variance* is about 2.5 times the contribution of *skewness*. Moreover, the contributions of both *kurtosis* and *entropy* are practically zero. However, as presented in Figure 1b, in the vanilla approach the difference between *variance* and *skewness* towards accuracy is much lower. In this case, we also note that *kurtosis* and *entropy* have contributed towards the performance measure.

Therefore, we may say that as our approach considers the range of thresholds, it provides the feature contributions towards the overall performance. On the other hand, the vanilla approach only indicates the contributions for a fixed threshold, which may vary considerably if another value is adopted.



(a) Contributions towards the AUC.



(b) Contributions towards the accuracy.

Figure 1: A comparison between our proposal and the vanilla Shapley values.