

Correction

## Correction: Rabie et al. A Proficient ZESO-DRKFC Model for Smart Grid SCADA Security. *Electronics* 2022, 11, 4144

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In the original publication [1], the following has been added:

46. Devyatkin, D.A. Estimation of Vegetation Indices With Random Kernel Forests. *IEEE Access* **2023**, *11*, 29500–29509. [[CrossRef](#)]

This citation has now been inserted in “3.3. Deep Random Kernel Forest Classification (DRKFC)”, which should read:

“3.3. Deep Random Kernel Forest Classification (DRKFC)

After feature selection, an intelligent DRKFC model is deployed to categorize the normal and attacking data flows according to the set of extracted features. Conventionally, various machine learning and deep learning techniques are implemented for security applications. But, it degrades with key problems of complex mathematical modulations, high false positives, overlapping results, and incapability to handle huge dimensional datasets. Therefore, this paper motivates to implement a new and smart DRKFC model for securing the smart grid SCADA systems. A random forest constructed from trees with kernel decision splitters is called a Kernel Forest. A general top-down induction process is followed in the top-level training of such trees. The traditional random forest algorithm greedily locates a quasi-optimal distribution of classes to sub-trees at each stump and trains this stump as a binary classifier. In this approach, the data is processed progressively through a number of layers, which is a variant of the deep forest. Each sample from the training set is used to build a set of objects in that layer, and each object is labeled with the class of the original sample. The layered architecture model of the proposed DRKFC is shown in Figure 5. The fundamental idea behind that strengthening procedure is to swap out the initial class empirical likelihoods previously stored in each tree leaf of a pre-trained forest with new ones produced by explicitly reducing a global loss function in accordance with the random forest’s averaging rule. Let consider, the forest has  $K$  number of trees and  $\delta$  number of leaves, which is in the form of  $\Psi : \mathbb{N}^f \rightarrow \{0, 1\}^{K\delta}$ . This is the function for any sample  $t$  that returns the binary vector and its elements are 1, if  $t$  goes to the corresponding decision tree; otherwise, it is set as 0 [46].”

With this correction, the order of some references has been adjusted accordingly. The authors state that the scientific conclusions are unaffected. This correction was approved by the Academic Editor. The original publication has also been updated.



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## Reference

1. Rabie, O.B.J.; Balachandran, P.K.; Khojah, M.; Selvarajan, S. A Proficient ZESO-DRKFC Model for Smart Grid SCADA Security. *Electronics* **2022**, *11*, 4144. [[CrossRef](#)]

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