

AISSAI Anomaly Detection Workshop



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Signatures to help interpretability of anomalies

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Machine learning is often viewed as a black box when it comes to understanding its output, be it a decision or a score. Automatic anomaly detection is no exception to this rule, and quite often the human expert is left to independently analyze the data in order to understand why it is tagged as an anomaly. Worst, the expert may end up scrutinizing over and over the same kind of rare phenomena which all share a high anomaly score, while missing anomalies of interest. In this presentation, I'll introduce the idea of anomaly signature, whose aim is to help the interpretability of an anomaly score, by highlighting which features contributed to the decision. Similar in spirit to feature importance for classification, anomaly signatures can also be used to improve the feature selection to define anomalies. I'll present applications to the search of anomalies in astrophysics within the framework of the SNAD team.

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