Classification-Based Anomaly Detection for General Data

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Anomaly detection, finding patterns that substantially deviate from those seen previously, is one of the fundamental problems of artificial intelligence. Recently, classification-based methods were shown to achieve superior results on this task. In this work, we present a unifying view and propose an open-set method to relax current generalization assumptions. Furthermore, we extend the applicability of transformation-based methods to non-image data using random affine transformations. Our method is shown to obtain state-of-the-art accuracy and is applicable to broad data types. The strong performance of our method is extensively validated on multiple datasets from different domains.