Dynamic Intrusion Detection Method for Mobile Ad Hoc Network Using CPDOD Algorithm

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Abstract

Mobile Ad hoc networks (MANETs) are susceptible to several types of attacks due to their open medium, lack of centralized monitoring and management point, dynamic topology and other features. Many of the intrusion detection techniques developed on wired networks cannot be directly applied to MANET due to special characteristics of the networks. However, all such intrusion detection techniques suffer from performance penalties and high false alarm rates. In this paper, we propose a novel intrusion detection method by combining two anomaly methods Conformal Predictor k-nearest neighbor and Distance-based Outlier Detection (CPDOD) algorithm. A series of experimental results demonstrate that the proposed method can effectively detect anomalies with low false positive rate, high detection rate and achieve higher detection accuracy.

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CP-KNN Dynamic intrusion detection Conformal Prediction