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.

Reference
- Detecting outliers using transduction and statistical testing. In KDD '06: Proceedings of the 12th ACM SIGKDD international conference on Knowledge discovery and data mining, pages 55–64, New York, NY, USA, 2006. ACM.
Index Terms

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Key words

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CPDOD

CP-KNN

Dynamic intrusion detection

Conformal Prediction