An Investigation of Scalable Anomaly Detection Techniques for a Large Network of Wi-Fi Hotspots

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Abstract.

The paper seeks to investigate the use of scalable machine learning techniques to address anomaly detection problem in a large Wi-Fi network. This was in the efforts of achieving a highly scalable preemptive monitoring tool for wireless networks. The Neural Networks, Bayesian Networks and Artificial Immune Systems were used for this experiment. Using a set of data extracted from a live network of Wi-Fi hotspots managed by an ISP; we integrated algorithms into a data collection system to detect anomalous performance over several test case scenarios. The results are revealed and discussed in terms of both anomaly performance and statistical significance.