**An epidemic based model for the predictions of OOFI in an IoT platform**

ABSTRACT

Based on the notion that when a particular node is maliciously infected, there is probability of propagating such infections to other susceptible nodes in a network. This lead to the development of malware spreading models to predict the transmission rate, transmission parameters and the number of infected nodes per unit time. However, the emergence of Internet of Things (IoT) with strong base in both wired and wireless sensor network(WSN), predicting the spreading of malware infections is not the only source of concern for forensic analysis. Considering the heterogeneity and data volatility of IoT nodes, predicting the object of forensic interest (OOFI) in resource-constraint devices like sensor nodes as well as the diffusion of data among the neighboring nodes remain a critical issue for forensic analysis. From the concept of epidemic theory, a novel model is proposed called Susceptible-Infective-Recovered with Forensic (SIR-F) that can predict and isolate OOFI among various nodes in IoT network. The essence of introducing forensic mechanism is to ascertain the OOFI by predicting the responsible nodes holding the data of forensic interest. As such, SIR-F can timely enhance the process of identifying OOFI of the collection phase of digital forensic standard operating procedure (SOP).

**Keyword:** Forensic; Internet of Things; Malware; Sensor