

E-FRAUD FORENSICS INVESTIGATION TECHNIQUES WITH FORMAL CONCEPT ANALYSIS



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Abstract:

One of the cardinal impacts of Cyber Security (CS) is the combating of financial e-fraud and other related crimes. Formal Concept Analysis (FCA) could serve as a great useful weapon in the detection and retrieving of various crime activities perpetrated on the cyberspace. This paper proposes a CS-based investigation process through visualization and data analysis of mobile communication devices using the formal Concept Analysis which is a data analysis technique based on lattice theory and propositional Calculus. The method to be employed visualizes the lattice that maybe conceived as a set of common and distinct attributes of data in such a way that classifications are done based on related data with respect to time and events of the crime performance within a some Internet geographical space. The lattices were then built using Galicia 3.2 Lattice building software using the data connected of criminal activities that were collected from the mobile phones, Laptops etc.. The results obtained were used in building a more defined and conceptualized system for analysis of e-fraud data in the cyberspace that could be easily visualized and intelligently analysed by the cyberspace computational systems processes.

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