Human Resources and their Tendency to Information Security Crimes Based on Holland Theory

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ABSTRACT

Security systems are often the target of cyber-criminals and professional hackers, but often they fail in hiding all traces of the attack, thereby leaving critical evidence that could lead to identifying and arresting the criminal. However, hacking skills vary from one hacker to another depending on the hacker’s personal traits, behavior, and intellectual tendencies. The aim of this study is to develop a proposed descriptive model of the behavioral patterns and motives of hackers based on programmable psychological theories, modeled using object-oriented programming models. The study proposes a descriptive model of an inverse algorithm that simulates Holland’s Theory of Behavioral Patterns. Findings show that this descriptive model is applicable to be produced as a code map for the human resources of an investigative nature.

KEYWORDS

Algorithm, Criminal Tendencies, Electronic Theft Hacking, Holland’s Theory of Behavioral Patterns, Human Resources, Security Breach, Simulation

INTRODUCTION

International cybercrimes committed by young people in the Arab region are punishable by law. However, cybercrime has become a prevailing harmful phenomenon where many Internet users suffer from, and today eliminating it is a necessity. Currently, several professional agencies are diligently working on this phenomenon following different methods such as setting up electronic tracking systems, detecting suspicious activities of a number of amateur and professional cybercriminals and increasing the protection and security levels for protecting intellectual and physical property rights. However, few researchers focus on the behavioral aspect of cybercriminals, and how to deal with them based on their professional abilities, skills, and experience in cybersecurity. This study is a novel scientific initiative to link the behavioral aspect and personal traits with personal skills. The purpose of this study is to predict students’ tendencies and inclinations towards committing acts of cybercrimes. However, to develop a descriptive model of behavioral patterns of cybercriminals, and their motives based on psychological theories. Moreover, the expected model could be modeled using object-oriented programming methods.

The use of the individual characteristics of Internet users is a modern topic of technology in the late second millennium. However, the adoption of behavioral characteristics in the classification of cybercriminal led many authors in applying the concept of characterization in continuous stereotyping over years ago, but as a methodology of using object-oriented programming of algorithms still not mature according to Wori (2014).

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This research is unique due to the unavailability of similar studies that investigate how to identify or predict the personal traits of a cybercriminal by evaluating individual skills and abilities based on individual behavior and personality using programmable model. Furthermore, this research addresses the variations in the level of professional skills of cybercriminals depending on their personality, behavior and intellectual tendencies.

The purpose of this research is to reach a conceptual descriptive model of an algorithm that simulates Holland Occupational Themes (RIASEC). The model expected to be capable of identifying the personal traits of university students who could be inclined to commit a security breach, predicting the characteristics of a cybercriminal or a hacker, and producing a map of codes for the results of the analysis.

Research Questions

The research aims at answering the following queries:

1. What are the behavioral patterns of investigative personalities as per Holland’s classification?
2. What are the skills that characterize such behavioral patterns?
3. Is it possible to propose a diagram for the process of classifying skills based on such behavioral patterns?
4. How compatible is the diagram with the computer algorithm?
5. How are behavioral patterns reversely checked to determine the skills of - both genders- student who commits a cybercrime?

LITERATURE REVIEW

In the 1950s, (John)developed a theory titled in his name. The core idea of his theory is how to select employees based on their experience and cognitive skills. He stated that such traits are measurable if they categorized into classifiable groups. Based on this categorization, Holland classified employees' behavioral patterns into six types and is commonly abbreviated with the acronym (RIASEC). Each letter in the acronym represents each category of the behavioral patterns as follows: R-Realistic, I-Investigative, A-Artistic, S-Social, E-Enterprising, and C-Conventional. Several researchers availed themselves of this theory by examining every characteristic or skill to make a new addition to Holland’s model. Holland’s theory used in many studies such as determining the duality features of the employee to determine duality impact on employee’s satisfaction with working place as mentioned by Phan and Rounds (2017).

Therefore, the theory underwent development by Assouline and Meir (1987); Spokane, Meir, and Catalano (2000) and Tsabari, Tziner, and Meir (2005) who developed the implementation of Holland’s theory. Furthermore, Hoffmann (1999) indicated that the proficiency of an individual is reflected in his behavior, which is based on two basic elements: the mentality and ability. Moreover, Lucia and Lepsinger (1999) conducted a research on this premise and found that the definition of proficiency varies depending on the main purpose of using it.

Noe, Hollenbeck, Gerhart, and Wright (2006) in their book on human and technical resources and the global economic state that human resources management means gaining a competitive advantage in the new economy, and that an effective human resources management is more necessary to get a real competitive advantage in the market. They maintained also that competitors are always looking for sources of profit that encourage talents to achieve profitability and a competitive advantage but this poses four challenges to corporates: a global challenge, the challenge of meeting the needs of stakeholders, the challenge of high-performance business practices and the challenge of competition in the new economy. These challenges fall under the umbrella of protecting assets and abilities such as qualified human resources. (Noe et al.) stated that in order to have an effective and professional
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