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Integrate Text Mining into Computer and Information Security Education

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Abstract

Insider threats has become a significant challenge to organization, due to the employees varying levels of access to the internal network. This will intern bypass the external security measures that have been put in place to protect the organization's resources. Computer-mediated communication (CMC) is a form of communication over virtual spaces where users cannot see each other. CMC includes email and communication over social networks, amongst others. This paper focuses on the design and implementation of exercise modules, which can be integrated into cybersecurity courses. The main objectives of the paper include how to teach and integrate the CMC learning modules into cyber security courses. Further, experimental case studies and hands-on labs will be discussed to facilitate effective teaching practices pertaining to cybersecurity education.

Disciplines

Information Security | Management Information Systems | Technology and Innovation

SUMMARY

In today's business world, cybersecurity is becoming a top priority at a rapid rate, due to the increase in the number security issues over the past few years. One among these major security issues are the insider threats which has become a significant challenge to organization, due to the employees varying levels of access to the internal network. In order to effectively combat against insider threats, organizations need to be able to determine whether an employee should be considered as a potential risk to the assets.

Computer-mediated communication (CMC) is a form of communication over virtual spaces where users cannot see each other. Textual analysis is a subset of CMC, which is the process of making an educated guess at a context, following the interpretation of related text. This paper will identify the need for a method of insider threat detection by using textual analysis and to demonstrate the effectiveness when compared to the traditional methods of identification and analysis. Also, the paper will aim at teaching students to use text mining as an experimental tool to be able to detect insider threats through analyzing computer mediated communication of employees.