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Blockchain-Integrated Advanced Persistent Threat Detection Using Optimized Deep Learning-Enabled Feature Fusion

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Abstract

Through Advanced Persistent Threats (APTs), which can reveal data alteration, destruction, or Denial of Service attacks through the examples of exposed hardware and software, the information technology model advances. Moving Target (MTD) is a promising risk-reduction strategy that primarily relies on APTs by utilizing dynamic and randomization techniques on properties that are collaborated. Although there are various MTD approaches to implement the blind random mutation, it still produces better performance overhead as well as poor defense utility. Additionally, APT is a unique assault strategy that was typically developed by hacking groups to steal data or deactivate systems for enormous originalities and uniform countries. APT is a multi-stage, long-term representative, and it is difficult to identify attacks effectively using an outmoded approach. In this paper, Conditional Dingo Optimization Algorithm Deep Residual Network (CDOA-based DRN) is devised for APT detection. Moreover, correlation Tversky index-based similarity is designed for performing feature fusion. The hybrid optimization algorithm effectively increases the performance and reduces various real-world issues. Testing accuracy, True Positive Rate, and False Positive Rate of the newly developed CDOA-based DRN are 95.43%, 96.34%, and 91.43%, respectively, for better performance.

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