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A COMPREHENSIVE STUDY ON DNA BASED SECURITY SCHEME USING DEEP LEARNING IN HEALTHCARE

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Abstract. The internet is widening day by day followed by security issues related to it. There are many approaches to achieve a secure cyber environment but still, there always exists room for the optimal choice to attain security goals. Artificial intelligence (AI) has given a new vision to the technology by implementing its remarkable applications for common users by providing ease in human life with its unique inventions. Deep learning (DL) has emerged from machine learning that relates to the branch of AI itself. In DL, the machine adopts the behavior of the human mind through its various hidden layers to generate the output similarly as the human mind should do. Research is on DNA-based security using DL that works similarly to cryptography and ensures secure data transfer among cyber users. This combination is studied by recent researchers and found its successfulness in enhancing the security of data. Moreover, the DNA scheme has empowered security systems by safeguarding against major cyberattacks. Although, it is being used in multiple real-world domains, we concise our research on the health sector where it is used to handle various forms of patient's health data records. The study found that the combination of DNA sequence along with DL techniques enhances data confidentiality to be shared with concerned legitimate users and hence ensuring data confidentiality, integrity, authorization, and authentication and this is what we require in the medical field too. So, DNA security mechanisms undoubtedly strengthen the security of data by implementing DL methods and techniques in the health section.

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INTRODUCTION

This is an era of the digital world where physical systems connect with cyber systems to formulate a Cyber world (Mohamed et al., 2020). Physical systems are in direct contact with systems, humans, or other physical environments and so can connect most efficiently and accurately. Cyber security is a matter of utmost concern in an official domain, business

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