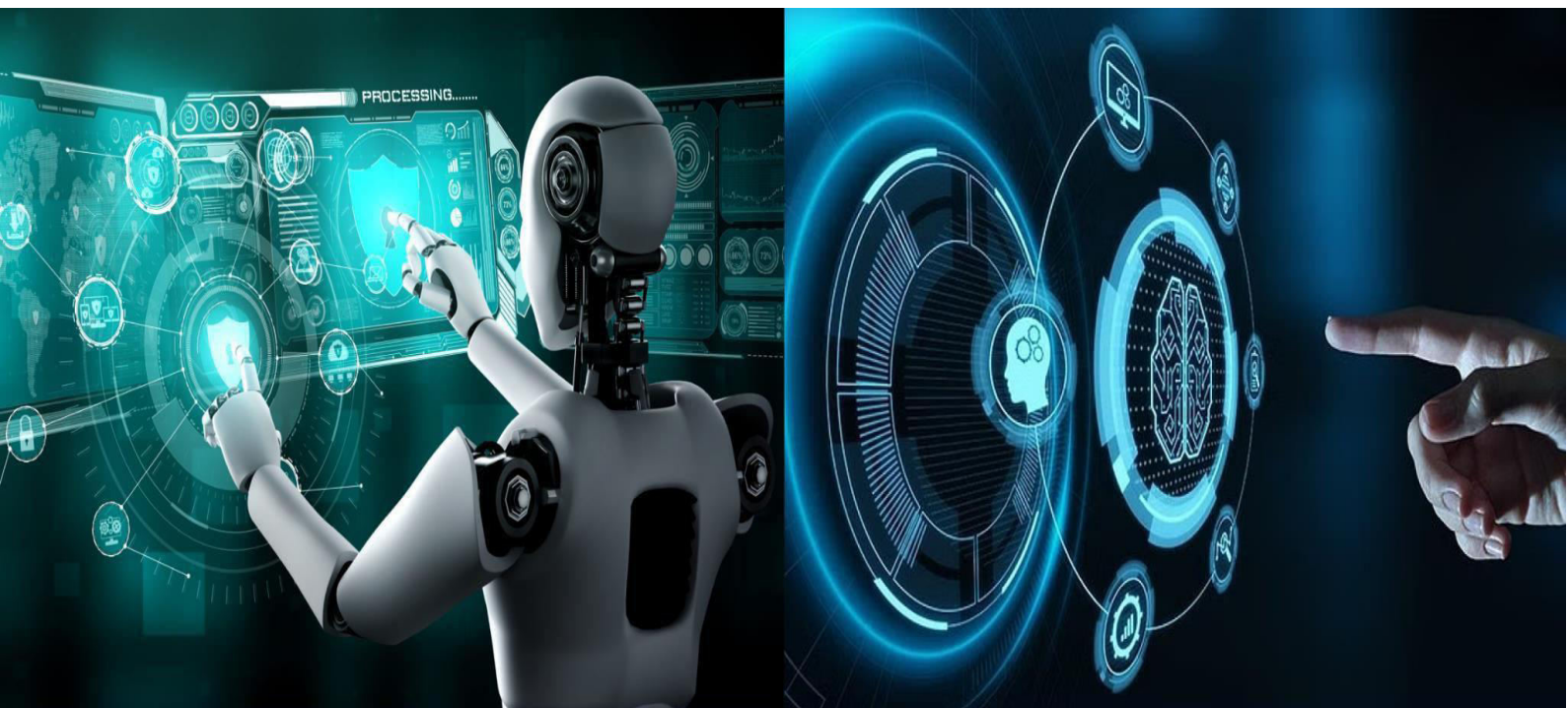




International Journal of Innovative Research in Computer and Communication Engineering

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)





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Design and Implementation of a Secure Online Auction System with Automated Bidding

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ABSTRACT: Online Auction Systems (OAS) are an essential part of modern e-commerce. This paper presents a secure and scalable online auction system with an automated bidding mechanism. The system integrates authentication, encryption, and rule-based bidding agents to improve efficiency, fairness, and user experience. A mathematical model and simulation environment are used to evaluate performance. Results show that the proposed approach outperforms traditional manual bidding systems in terms of efficiency and reliability.

KEYWORDS: Online Auction System, Automated Bidding, Security, E-commerce, Performance Evaluation

I. INTRODUCTION

Online auction systems play a vital role in electronic commerce by enabling competitive bidding over digital platforms. With the growth of internet users, such systems must address challenges related to scalability, performance, and security. Manual bidding requires continuous user involvement and is inefficient. Automated bidding agents help users by placing bids according to predefined strategies and constraints. Security mechanisms such as authentication, encryption, and access control are essential because these systems handle sensitive user data and financial transactions. Therefore, a secure and efficient architecture is necessary for real-world deployment and large-scale usage.

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II. LITERATURE REVIEW

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VI. MATHEMATICAL MODEL

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VII. SIMULATION ENVIRONMENT

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VIII. PERFORMANCE METRICS

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IX. RESULTS AND ANALYSIS

Online auction systems play a vital role in electronic commerce by enabling competitive bidding over digital platforms. With the growth of internet users, such systems must address challenges related to scalability, performance, and security. Manual bidding requires continuous user involvement and is inefficient. Automated bidding agents help users by placing bids according to predefined strategies and constraints. Security mechanisms such as authentication, encryption, and access control are essential because these systems handle sensitive user data and financial transactions. Therefore, a secure and efficient architecture is necessary for real-world deployment and large-scale usage.



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X. DISCUSSION

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XI. CONCLUSION AND FUTURE SCOPE

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