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ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING APPLICATIONS IN OPTION PRICING AND FUTURES TRADING: A SYSTEMATIC REVIEW OF EMERGING DIRECTIONS

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The emergence of artificial intelligence (AI) and machine learning (ML) has radically changed the financial derivative trading industry. This is a review article summarizing the existing research on the use of the ML algorithms in the possibility of option pricing, volatility prediction, and systematic futures trading. Even though such fundamental financial modeling models as Black-Scholes and GARCH are still valuable tools in financial modeling, it has been shown in various studies that the use of ML algorithms, i.e. neural networks, ensemble algorithms and reinforcement learning are more accurate in making predictions of non-linear and high-frequency data. The purpose of the paper is to assess the positive and negative aspects of these models and trace their development at the global level. The results suggest that although the machine learning models perform better compared to the traditional ones in complex and dynamic data sets, there are still some difficulties associated with the interpretability, the quality of data, and the predictability of models in different market situations.