Artificial Intelligence Towards Enhancing the Risk Management Practices During the Design Process

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Abstract. The design process across various industries involves intricate decision-making, problem-solving, and consideration of multiple factors. However, risks during the design process can jeopardize project success and lead to costly errors. Traditional risk management approaches in design often rely on manual & computerized analysis, which is time-consuming, limited in scope, and prone to human biases. The emergence of artificial intelligence (AI) presents an opportunity to revolutionize risk management in design. AI algorithms can process vast amounts of data, identify patterns, and provide predictive insights, enhancing risk identification and mitigation. This research aims to investigate the relationship between design risks and AI towards enhancing the risk management process. Using a mixed methodology approach, a qualitative method was used through investigating previous literature to identify traditional risk management limitations, design risks and AI tools and methods. Secondly, relationship between identified risks and AI tools was proposed. This was followed by quantitative method through case studies analysis that assess the validity of the proposed relationship. The goal is to establish a new paradigm where AI and risk management converge to create a future where risks that occur during the design process can effectively be identified and managed, fostering innovation and improving project outcomes.

Keywords: Artificial Intelligence; Risk Management; Design Process.