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Advances in AI, 3D Printing, and Robotics in Construction

This review examines the integration of Artificial Intelligence (AI), 3D printing (3DP), and robotics into the construction industry, assessing their potential benefits, challenges, and future research directions. The review synthesizes findings from three key papers: one on the adoption of AI in construction, another on AI techniques applied to 3D printing in architecture, and a third on robotic technologies for construction. The review reveals that while AI offers significant improvements in planning and efficiency, its adoption is hindered by the fragmented nature of the industry. AI's potential in 3D printing for architecture is promising but underexplored. Additionally, robotic technologies are increasingly being applied to various construction tasks, though there is a noted gap in fully integrated robotic systems for on-site construction. The review underscores the need for further research to overcome current challenges and capitalize on these technologies to advance construction practices.

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