

A Systematic Literature Review on Integrated AI in Construction Project Scheduling with BIM of an Extended Abstract

Ziqi ZHANG^{1*}, Kazuya SHIDE²

¹ *Architecture and Architectural Engineering, Graduate School of Engineering and Science, Shibaura Institute of Technology, Japan, mj23095@shibaura-it.ac.jp*

² *Department of Architecture, School of Architecture, Shibaura Institute of Technology, Japan, shide@shibaura-it.ac.jp*

Abstract: BIM, as a means of integrating information into the entire lifecycle of construction, greatly enhances productivity in the AEC (Architecture, Engineering, and Construction) field. With the advent of the Fourth Industrial Revolution, new-generation technologies such as AI and automation have also entered the researchers' field of vision. Nowadays, there is an increasing number of studies combining these two powerful tools for applications in the AEC domain, particularly focusing on their deep and proactive integration into construction project scheduling. This study aims to systematically review the current research status of AI technology in construction project scheduling based on Building Information Modeling (BIM). Through meticulous selection, we ultimately identified 46 peer-reviewed articles as the subject of our investigation. Building upon these sources, we delve into the following inquiries: firstly, we analyze which specific AI algorithms and technologies have been widely researched and practically applied in BIM-based construction project scheduling. Secondly, we examine the challenges and limitations of AI application in construction project scheduling within the BIM environment. Lastly, we explore strategies for further advancing AI technology in supporting construction project scheduling with BIM, aiming to better meet the demands of the construction industry.

In terms of technological application, we observe that while decision-making was the primary focus of AI technology in the past, automation now occupies a more significant position in construction project scheduling. Looking ahead, we anticipate that advanced technologies such as deep learning and genetic algorithms will play a more substantial role in this field, offering more efficient and accurate solutions for construction project scheduling.

This paper systematically delineates the current research status of AI in construction project scheduling within the BIM environment, providing not only technical guidance for innovation in current construction project management but also valuable insights into the future development directions of AI technology in project scheduling.

Key words: AI, BIM, Scheduling, Construction project scheduling, Deep learning

1. INTRODUCTION

2. SUBMISSION

3. FORMAT

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REFERENCES