

Research trends in digital twins based on Scopus database: a scientific literature review

Jiang Xi¹, Faridahanim Ahmad¹, and Gong Fang²

¹Universiti Teknologi Malaysia School of Civil Engineering

²Chengdu Normal University

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Abstract

In recent years, with the updating and iterating of new global technologies, digital twins (DTs) originated in the aerospace industry has been widely used in smart manufacturing, smart construction, and smart management as a new type of informatization management tool. It is therefore important for scholars to understand the current state of research on DTs to conduct more targeted research in the future. Based on Scopus, 7384 publications related to DTs were found from 1951 to 2023 in this study. With VOSviewers, the major countries, authors, and institutions researching DTs globally were analyzed and discussed. In conclusion, the study found that since 2018, increasing numbers of scholars around the globe, especially in China and the United States, have conducted relevant research in relation to DTs. Manufacturing and construction are the most common application areas for DTs. Over the past three years, the integration of AI, IoT, cloud, and digital technologies has developed into a hotpot of research. Additionally, communication technologies such as 5G and 6G contribute to the development of DTs. In the future, it can be predicted that DTs will be utilizing machine learning, blockchain and other technologies as a result of advancements in becoming smarter and more secure over the years.

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