Evaluating the Implementation of Machine Learning Techniques in the South African Built Environment

Authors : Peter Adekunle, Clinton Aigbavboa, Matthew Ikuabe, Opeoluwa Akinradewo

Abstract : The future of machine learning (ML) in building may seem like a distant idea that will take decades to materialize, but it is actually far closer than previously believed. In reality, the built environment has been progressively increasing interest in machine learning. Although it could appear to be a very technical, impersonal approach, it can really make things more personable. Instead of eliminating humans out of the equation, machine learning allows people do their real work more efficiently. It is therefore vital to evaluate the factors influencing the implementation and challenges of implementing machine learning techniques in the South African built environment. The study's design was one of a survey. In South Africa, construction workers and professionals were given a total of one hundred fifty (150) questionnaires, of which one hundred and twenty-four (124) were returned and deemed eligible for study. Utilizing percentage, mean item scores, standard deviation, and Kruskal-Wallis, the collected data was analyzed. The results demonstrate that the top factors influencing the adoption of machine learning are knowledge level and a lack of understanding of its potential benefits. While lack of collaboration among stakeholders and lack of tools and services are the key hurdles to the deployment of machine learning within the South African built environment. The study came to the conclusion that ML adoption should be promoted in order to increase safety, productivity, and service quality within the built environment.

Keywords : machine learning, implementation, built environment, construction stakeholders

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