A view of a room with VR and AI for the field of interior design

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Bringing together virtual reality (VR) and artificial intelligence (AI) could lead to significant advancements in the field of interior design, according to research published in the *International Journal of Information and Communication Technology*.

Such a technological merger could be used to improve the design experience, tailor designs through simulated indoor environments, and give us better architectural outcomes. The approach would not remove our reliance on specialist designers and architects, but could lead to new approaches and opportunities.

According to Nan Yin of the Jilin University of Architecture and Technology in Changchun, Jilin, China, user-friendly design software, particularly from industry leaders like Autodesk in the U.S. and Kusile in China, has helped lower the overall workload for designers.

Such software has allowed professionals to engage in interior design in different ways and even opened up the possibility of design to amateur designers. These tools have commonly used 3D reconstruction and virtual environments to offer an intuitive design experience.

Yin suggests that geometric and mathematical optimization strategies are now needed to address the complexity of building interior design. He suggests that in the use of hybrid recommendation modes and convolutional neural networks (CNNs) it should be possible to allow professional standards to be maintained while allowing for user preferences. Such a system has great potential for interior design, the research suggests.

The work focuses on the scientific application of geometric forms in interior design, particularly in terms of furniture selection and placement, with the emphasis on space functionality and user experience. The study offers insights into how different geometric forms affect the way in which we can move around a space and how it can be broken up into different areas, or zones, with different purposes.

Yin has used collaborative filtering (CF) methods and CNNs to develop intelligent interior design schemes. The research thus offers a theoretical

basis for the use of geometric forms in design. The use of CNNs specifically allows texture analysis for comparing design elements.

More information: Nan Yin, The application of geometric form in architectural interior environment design, *International Journal of Information and Communication Technology* (2024). DOI: 10.1504/IJICT.2024.138449

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