



Augmented Panoramas of Reality as a Construction Safety Training Tool

PARS: Using Augmented Panoramas of Reality for Construction Safety Training

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Overview

As a construction occupational safety training tool, traditional Virtual reality (VR) simulations can provide workers safe and controlled experiences of unsafe scenarios. However, they are expensive and time-consuming to develop and often do not offer true representations of real-world conditions. The research team used augmented panoramic captured images of real construction jobsites to create PARS (PANoramas of Reality for Safety), a hazard-identification training tool based on panoramas of reality, which enables learners to navigate, observe, and identify hazards in the complex context of real construction sites. The team then tested its performance against those of a traditional VR-based system.

Key Findings

- Virtual reality (VR) is more computationally intensive and requires more time to create a representation of a real construction jobsite than PARS.
- PARS offers a low-cost, simple-to-capture representation of real settings with create unbroken views of a whole region surrounding an observer, allowing for an interactive look-around experience of a real jobsite with a strong sense of presence.
- PARS provides a true-to-life representation of reality which makes hazard identification harder compared to VR.
- VR provides a clear and simple representation of reality which makes hazard identification simpler compared to PARS.

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