عنوان مقاله:

HSE and health monitoring of structures in urban underground spaces using artificial intelligence

محل انتشار:

سومین کنفرانس بین المللی شهر هوشمند، چالش ها و راهبردها (سال: 1402)

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نویسندگان:

Seyed Reza Samaei - ۱. Post-doctoral, Lecturer of Technical and Engineering Faculty, Science and Research Branch, Islamic Azad University, Tehran, Iran.

Elham Behdadfar - ۲. Bachelor's degree graduate, primary education field, The department of education region ۹, education of Tehran, Iran.

خلاصه مقاله:

This research investigates the integration of Health, Safety, and Environment (HSE) considerations, coupled with advanced artificial intelligence (AI) technologies, for the comprehensive monitoring of structures within urban underground spaces. With the increasing trend of subterranean development in urban areas, ensuring the safety of structures and the well-being of occupants is of paramount importance. The study begins by examining the unique challenges posed by urban underground spaces and the necessity of robust HSE protocols. It then delves into the application of AI in health monitoring systems, focusing on structural health and environmental conditions. AI-driven algorithms play a pivotal role in real-time analysis, anomaly detection, and predictive maintenance, ensuring the structural integrity of underground infrastructure. The research highlights the significance of AI-powered emergency response systems, capable of swift and precise reactions to unforeseen events. The integration of these technologies not only enhances safety measures but also contributes to sustainable urban development practices. The findings of this study provide valuable insights for urban planners, engineers, and policymakers involved in subterranean development. By leveraging AI for HSE and health monitoring, cities can proactively address challenges, foster resilience, and create safer, more sustainable urban underground environments.

کلمات کلیدی:

HSE, Structural Health Monitoring, Urban Underground Spaces, Artificial Intelligence, Emergency Response.