ABSTRACT SUBMISSION

Next Generation Archaeological Databases: Leveraging AI, 3D Visualization, and Data Analytics for Heritage in Saudi Arabia (NEOM)

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Abstract

The management of archaeological data requires a unified, centralized platform capable of handling diverse and complex datasets from research and surveys to excavations and project management. We've developed a next-generation database ecosystem tailored for cultural heritage institutions, supporting every stage of workflow from field data collection to visualization and interpretation.
NEOM Heritage Department platform integrates with ESRI geospatial solutions, including Dashboards, Field Maps and Survey123. Field collection apps enable real-time data synchronization to secure cloud storage, allowing instant access for review and analysis. ESRI Dashboards and Experience Builder provide powerful data analytics and 3D visualizations of archaeological features, transforming raw data into insightful, interactive visuals. The platform's AI-powered services optimize metadata management and advanced search features facilitate efficient querying and organization of large datasets.
The implementation of this ecosystem has significantly enhanced the efficiency of data workflows across various stages of archaeological data management. Our solution offers heritage institutions an improved ability to manage and interpret large datasets with greater efficiency and accuracy. It addresses the immediate needs of cultural heritage institutions while aiming to set a new standard for future digital infrastructure in archaeological data management, promoting better preservation, analysis, and dissemination of cultural heritage information.

Keywords

Archaeological data management, cultural heritage platform, geospatial solutions, AI, 3D visualization

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