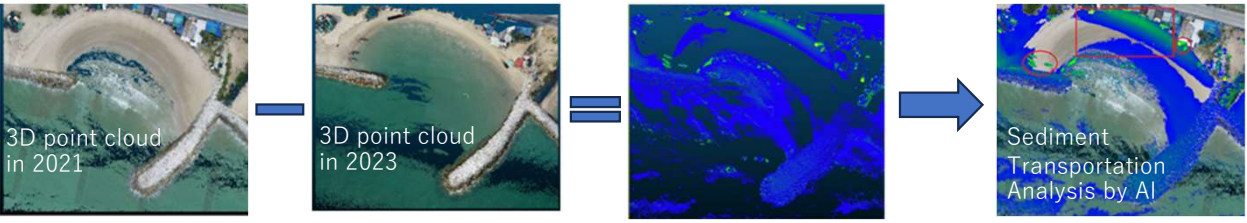




Coastal Erosion Monitoring Platform Based on Wireless Sensor Networks and 3D Point Clouds from Airborne LiDAR

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Coastal erosion is a growing concern for numerous coastal communities and ecosystems and raises a global issue. The environmental consequences are severe, causing habitat destruction, loss of biodiversity, and disruptions to entire ecosystems. Therefore, sustainable coastal management practices and protective measures that balance environmental preservation, community support, and responsible development must be implemented to address these issues effectively. In this context, comprehensive and reliable information is crucial for the implementation of protective measures with minimal impact. A data center platform that offers both raw and processed data is indispensable. This data can be sourced from a variety of local and remote techniques, including sensors, video monitoring systems, 3D point clouds, and weather stations. By amalgamating these diverse data sources and leveraging AI algorithms based on past experiences, we can gain a more nuanced understanding of the factors contributing to erosion. Therefore, in this project, we propose a platform for collecting, monitoring, and processing environmental data in coastal areas. The data, sourced from wireless network sensors, images from video monitoring systems, 3D point clouds, and weather stations, will be analyzed and integrated using AI algorithms. This platform is designed to support decision-making by providing recommendations or predictions based on data analysis.



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