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HaMMon: Automated Photogrammetric Workflow for Environmental Digital Twin Generation and Hazard Assessment

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This work reports recent advancements in the development of an automated photogrammetric pipeline for generating 3D geospatial digital twins, Data Visualization and Artificial Intelligence technologies, aimed at environmental monitoring and hazard assessment.
For interactive 3D visualization and analysis, the pipeline integrates dense 3D reconstructions into the CesiumJS web environment and includes an automated point-cloud classification tool that uses image masks to enrich the models with semantic labels.
Recent efforts have also focused on restructuring the workflow to ensure greater automation, modularity, and reproducibility, facilitating its integration within a Science Gateway framework for broader accessibility and scalability.

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