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BABYLON: An End-to-End Visual Analytics System for Massive-Scale Geospatial Data

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Background

GeoVisual analytics (GeoViz) is the science of analytical reasoning assisted by geospatial map interfaces. Traditionally, GeoViz comprises two phases: (1) spatial data preparation and (2) map visualization. Breaking the GeoViz process down into these two steps results in a lost opportunity to co-optimize the data preparation and map visualization phases in the same cluster resulting in additional processing time and computational resources

Invention Description

Researchers at Arizona state university have developed a tool, BABYLON, which overcomes the difficulties typically associated with GeoViz. They have overcome this obstacle by encapsulates the main steps of the map visualization process (e.g., pixelize spatial objects, pixel aggregation, and map tile rendering) into a set of massively parallelized operators. These features mean that the system is faster, more adaptable, and customizable.

Potential Applications

- Autonomous vehicles
- Intersection traffic management
- Traffic management
- Mapping

Benefits and Advantages

- Faster than traditional GeoViz methods
- Increased efficiency and throughput over known approaches.

