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Real-Time Visualization Using GPU-Accelerated Filtering of LiDAR Data

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Abstract : This paper presents a real-time visualization technique and filtering of classified LiDAR point clouds. The visualization is capable of displaying filtered information organized in layers by the classification attribute saved within LiDAR data sets. We explain the used data structure and data management, which enables real-time presentation of layered LiDAR data. Real-time visualization is achieved with LOD optimization based on the distance from the observer without loss of quality. The filtering process is done in two steps and is entirely executed on the GPU and implemented using programmable shaders.

Keywords : filtering, graphics, level-of-details, LiDAR, real-time visualization
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