

Massive Data Visualization Techniques for use in Virtual Reality Devices

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Summary:

Scientific simulations executed on supercomputers produce massive amounts of data. Visualizing this data is essential to discovery and dissemination, but methods for transforming and displaying such large data visualizations for use in Extended Reality (XR) devices are not commonly supported. We investigated the viability of existing XR applications (i.e., ParaView VR, SummitVR, and Omniverse XR) to display large data visualizations. Our investigations led us to create a proof-of-concept Virtual Reality (VR) application with Unity using Universal Scene Description (USD) files exported from Houdini to display and interact with large time-varying scientific data visualizations. We present our investigations as a basis for future work to display and interact with scientific data visualizations in XR.

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