

## Recent Advances in Queuing Ray Tracing for Simulation and In Situ Analysis

*June 7, 2:30PM – 3:30PM*

Ray tracing, a popular technique for generating photo-realistic images for entertainment media, is now integrated into popular visualization platforms such as ParaView and VisIt, which provides researchers more powerful visual rendering mechanisms sooner in their discovery pipelines.

Ray tracing calculations can be performed efficiently across a variety of modern architectures, including explicit hardware acceleration on some GPUs, which makes ray tracing an attractive choice for in situ analysis, where the visual analysis is performed on the same machine as the simulation, and potentially as an acceleration library for radiative transfer simulations as well. To fully unlock this potential integration into simulation codes, such implementations will need to leverage a ray tracing approach that allows for rays to migrate across physical nodes.

This talk will present recent work at the Texas Advanced Computing Center in providing efficient implementations of queuing ray tracers for use in both in situ and simulation contexts