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Information Science and Technology Seminar Speaker Series and Data Science at Scale Summer School Speaker Series

Gregory Abram
University of Texas at Austin

Rendering: OpenGL vs Ray Tracing

Wednesday, July 16, 2014

3:00 - 4:00 PM

TA-3, Bldg. 1690, Room 102 (CNLS Conference Room)

Abstract: Traditional rendering, as implemented by OpenGL and commonly used in interactive visualization, considers each geometrical element (e.g. triangle) independently and hence offers a poor approximation to global illumination, but can be implemented in hardware to achieve very high performance. Ray tracing, in contrast, is an elegant rendering algorithm that can provide a very good approximation to global illumination, but as been considered far too inefficient to use in interactive applications. However, researchers over the last decade have made great strides in improving its efficiency, and claim that its time has come. in this talk, I will describe the global illumination problem, show the contrast between traditionally rasterized and ray traced images, and discuss efficiency issues that separate the two algorithms.

Biography: Greg Abram is a visualization researcher at the Texas Advanced Computing Center, a research division of the University of Texas at Austin. Prior to joining TACC, he was at the IBM TJ Watson Research Center. He received his Ph.D. from the University of North Carolina at Chapel Hill in 1986.

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