From Geometric Modeling to Digital Earth

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Abstract

The Earth is immense, and abundant with interesting information. Recent advancements in geospatial sensors have resulted in the development of technologies capable of collecting large and dynamic geospatial data. As a result, we are experiencing an explosion in the volume and variability of geospatial data, and yet many remain unaware of or unable to access this wealth of data to make informed decisions regarding our planet. One viable solution to this challenge is to use a digital model of the Earth (a Digital Earth) as a place holder for integrating all sorts of geospatial datasets. The Digital Earth is a vision for Earth-based applications in which geospatial data may be assigned and retrieved using the 3D Earth as a reference model, rather than a 2D map. In this talk, an overview is provided of research projects and recent achievements from my group, related to Digital Earth. In these projects, we explore problems of creating and managing grid systems, large geospatial data processing and streaming, as well as creative visualization and interaction in Digital Earth.

Short Bio

Faramarz F. Samavati is a Professor of Computer Science at the University of Calgary. He is currently one of the Associate Heads (Graduate Director) of the Department of Computer Science. Faramarz's research interests include Computer Graphics, Visualization, 3D Imaging and Geometric Modeling. Dr. Samavati has published more than hundred and twenty peer reviewed papers, one book, and two patents. In the past seven years, he has received seven best paper awards, Digital Alberta Award, Great Supervisor Award, and University of Calgary Peak Award, which honors his contribution to the development of new technologies and innovations. Faramarz was one of the ASTech 2017 Nominees & Finalists for the award on Outstanding Leadership in Alberta Technology.