

Visual and Interactive Data Modeling for Science, Engineering, and Art

科学、工程与艺术中的可视化交互数据建模

时间：6月4日（星期五）下午 2:00
地点：北京大学理科二号楼 2736

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Abstract

From the recent video gaming success story of the Nintendo Wii to scientific uses of large stereoscopic displays, new interactive visualization technologies are changing the way we approach science, art, and social interactions. In this talk, I will present research designed to advance data modeling in 3D environments by effective interaction and visual communication. One obstacle blocking scientific use of this technology is the lack of understanding of 3D interactivity to construct useful applications. I will present a design method called domain-specific design that has successfully addressed this obstacle. Additionally, I will present quantitative evaluation of a set of interaction techniques that have led to effective spatial input. Another obstacle blocking the further development of visualization is the lack of theory in visualization. I will present my first attempt to evaluate cueing techniques for brain tensor field visualization. I will also talk about the progress of recent collaborative efforts to understand bat flights. Combining the interactive data modeling with carefully designed graphical representation will be critical for developing future visualization tools for science, engineering, and art.

Biography



Jian Chen is an assistant professor and the director of the interactive visual computing lab at the University of Southern Mississippi. Her research investigates new computing techniques for sciences in the areas of future computer displays, spatial input, and the theory of visualization. Prior to joining USM, she was a research associate at the Brown University Scientific Visualization lab with Prof. David H. Laidlaw. She received her Ph.D. in Computer Science from Virginia Tech with Prof. Doug Bowman. Her work on information visualization received best paper award from HFES; her work on 3D interaction was on the covers on various journal and conference proceedings, including the prestigious MIT presence journal. She is a member of IEEE and ACM.