

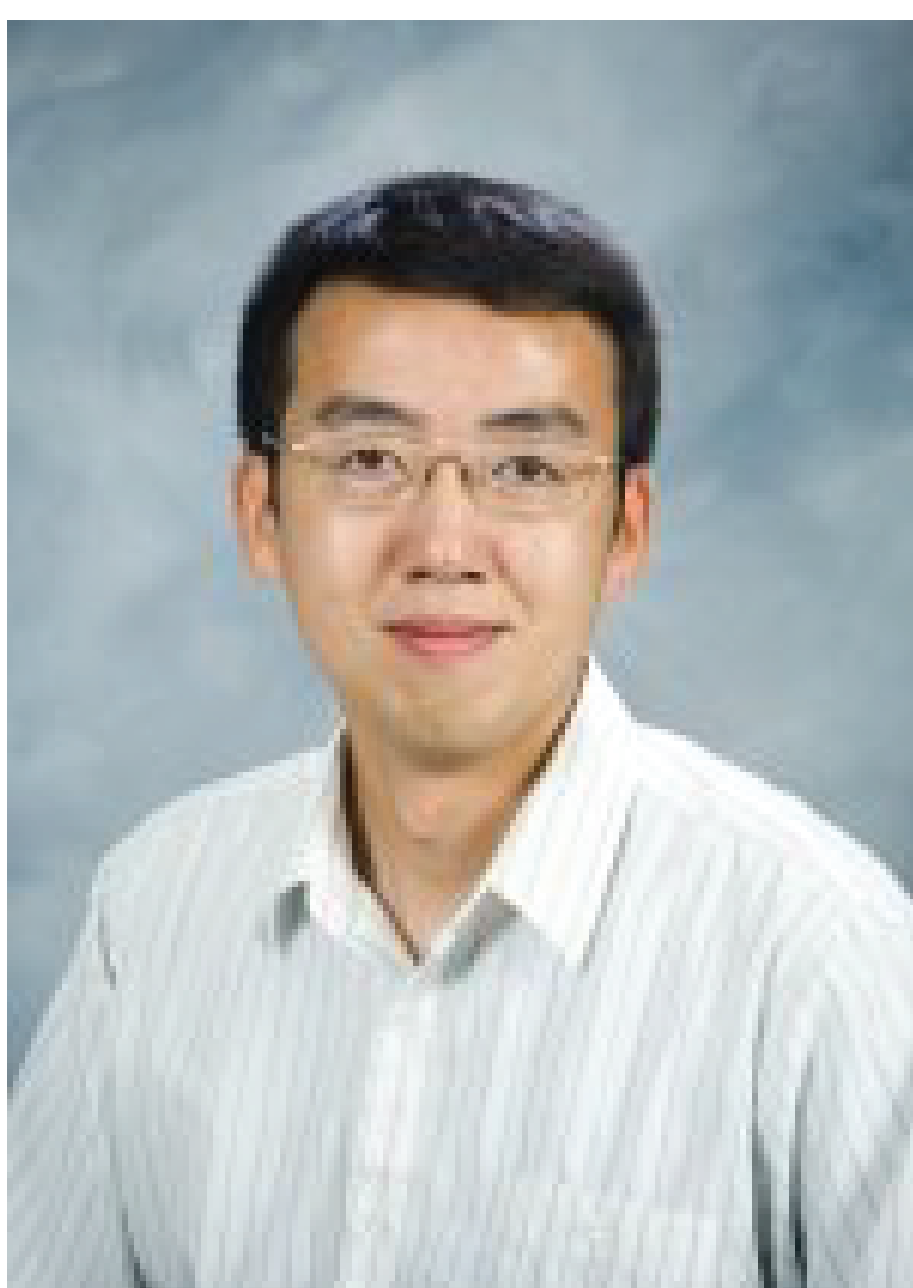
Quantification and Visualization of Ensemble Uncertainty

Prof. Song Zhang
Mississippi State University

2:00 pm-3:00 pm
Dec 5th, 2015 (Saturday)
Room 2305, Science Building No.2
Peking University

Abstract :

Uncertainty is inherent in scientific data. Quantification and interpretation of the uncertainty are essential to a holistic understanding of the data. Uncertainty representation is often overlooked in high-dimensional and multivariate data due to a lack of effective methods and a lack of guidance on appropriate existing methods. In this project, we systematically investigate uncertainty visualization in high-dimensional data, within the application domain of meteorology. The interdisciplinary research team spans different areas such as visualization, atmospheric science, and statistics. The research team is investigating (1) quantifying uncertainty by using bootstrap mean confidence intervals, which relax assumptions about the underlying distribution; (2) designing a number of uncertainty visualization methods and implement these methods in an integrated user interface; and (3) employing both qualitative and quantitative user studies to evaluate the uncertainty visualization methods.



Song Zhang received the BS degree in computer science from Nankai University in 1996 and the PhD degree in computer science from Brown University in 2006. He is an associate professor in the Department of Computer Science and Engineering, Mississippi State University. His research interests include scientific visualization, data analysis, medical imaging, and computer graphics. He is a senior member of the IEEE and a co-chair for Visualization and Data Analysis Conference.