UNIVERSITY OF SOUTH FLORIDA

Major Research Area Paper Presentation

Visual Analytics Processing in GPU-Based Database Management Systems
by
Chengcheng Mou
For the Ph.D. degree in Computer Science and Engineering

The goal of visualization is to aid our understanding of data by leveraging the highly tuned ability of human visual system to see patterns, spot trends, and identify outliers. In order to visual the data, most of the raw data need to be pre-processed and reorganized before rendering them. Typically, computing the aggregations among a group of data that sharing the same feature is an efficient summarization, in which a single aggregate represents insight of a large dataset. In addition, the exploration of interactive data visualization provides more valuable visions to the process of data analysis. The response time between user's move (e.g., zooming, panning) becomes a critical factor to the analytical reasoning. In other words, the interactive data visualization overlaps the fields in databases, visualization, and human-computer interaction. In this study, we aim to challenge the way that scientists usually think about data science problems and try to bridge the gap between aforementioned communities. We investigate the low-level computing features of general-purpose Graphics Processing Unit (GPGPU), design and implement efficient parallel algorithm for grouping/aggregates.

Wednesday, December. 9, 2020
2:00 PM
Online (Collaborate Ultra)
Please email chengcheng@usf.edu for more information

THE PUBLIC IS INVITED

Examining Committee
Yicheng Tu, Ph.D., Major Professor
Paul A. Rosen, Ph.D.
Srinivas, Katkoori, Ph.D.
Yu Zhang, Ph.D.
Feng Cheng, Ph.D.

Yu Sun, Ph.D.
Graduate Program Director
Computer Science and Engineering
College of Engineering

Sudeep Sarkar, Ph.D.
Department Chair
Computer Science and Engineering
College of Engineering