

## The 32nd CGV Seminar Series

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Speaker: Dr. Jaegul Choo

Title:

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Integrating Computational Methods in Visual Analytics

Abstract:

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Visual analytics, which leverages humans' capability via interactive visualization in data analyses, has recently been gaining popularity. As data become bigger and complicated, computational methods often play a crucial role in visual analytics by providing an important insight about the data. However, various hurdles exist when fully utilizing computational methods in visual analytics. Such hurdles include significant running time and difficulties in understanding and interacting with computational outputs.

In this talk, I present fundamental approaches as well as visual analytics systems for improving these problems mainly in the context of clustering and dimension reduction, which are the primary computational methods used in visual analytics. First, I introduce a foundational visual analytics system called the FODAVA testbed where users can easily apply various clustering and dimension reduction methods in their own data. Second, I describe PIVE (Per-Iteration Visualization Environment), a fundamental way to overcome the slow running time of computational methods in real-time visual analytics. Third, in the context of document topic modeling, I present a re-designed computational method and a visual analytics system that support various user interactions for understanding and improving topic modeling outputs. Finally, I describe a visual analytics system called VisIRR for interactive information retrieval and recommendation of large-scale document data.

Bio:

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Jaegul Choo is a PhD candidate and a research scientist in Computational Science and Engineering at Georgia Institute of Technology. His research focuses on promoting various computational methods in visual analytics. His recent work involves multiple disciplines including information visualization, visual analytics, human-computer interaction, machine learning, and data mining. Jaegul earned a B.A. in Electrical Engineering from Seoul National University in 2001 and an M.S. in Electrical Engineering from Georgia Institute of Technology in 2007.