GLOVE: An Interactive Visualization Service Framework with Multi-Dimensional Indexing on the GPU

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• GLOVE Client
  - Low End User
  - High End User

• GLORE
• GIP
• Display Cluster
  - GLOVE Rendering Engine
• GDM
  - Slave

GLORE
  - GDM
  - Slave

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GLOVE: An Interactive Visualization Service Framework

Due to high SIMD efficiency, GLOVE makes use of application-level cashes to reduce the number of fetches from external nodes, creating streamlines is still too slow due to the computing time to find requested data points.

GLOVE loads the entire dataset in advance while others load data on-demand.

Performance Evaluations

- GLOVE 
  - Grid Type
  - Size

- GPU Indexing 
  - Data Parallel Tree Traversal
  - Distributed Parallel Tree Traversal

- Performance comparison
  - Tool
  - GLOVE
  - GPU
  - VR

- Experimental Environments
  - Number of Points
  - Number of Variables
  - Memory
  - CPU

- Number of Variables
  - 10
  - 100
  - 1,000

- System
  - Xeon X5450 3.0GHz
  - Quadro X6000

- GPU Indexing
  - Data Parallel Tree Traversal
  - Distributed Parallel Tree Traversal

- Performance Improvement
  - Average Query Execution Time
  - Number of Indexed Points

References