A Scalable Platform for Interactive Large Graph Visualization

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The graphVizdb Platform

> Novel Graph Visual Exploration Paradigm
  Similar to the exploration of web maps

> Preprocessing
  Graph Layout ⇔ Spatial Indexing & DB Storing

> Exploration
  User Interaction ⇔ Spatial Window Queries

> Main Operations
  > Interactive Navigation
  > Multi-level Exploration
  > Keyword Search
  > Subgraph Selection & Manipulation

Approach Overview

Preprocessing

1. Split graph into partitions
2. Layout partitions
3. Organize & Merge partitions
4. Build abstraction layers
5. Store & Index data

Platform Architecture

Storage & Indexing Scheme

Performance Evaluation

> Data
  Wikidata RDF: 151M edges | 146M nodes | 2.3E-6 density
  Patent citation: 16.5M edges | 3.8M nodes | 1.4E-8 density

> Interaction
  Random window queries: 200^2 ~ 3000^2 pixels