Model Driven Visualization of Large Scale Relational Networks

**Issues**

- **Scale:**
  Focus on displaying certain properties of the graph.

- **Speed:**
  Feasible algorithms must run in sub-linear time.

- **Abstraction:**
  Derive a clustered graph that corresponds with the model.

- **Interaction:**
  Allow the user a means to specify the model.

**Overview**

Model Driven Visualization (MDV) is an approach to generating visualizations based on a model given by the user. Goals include:

- Determining how to impose the model on the underlying graph.
- Developing algorithms whose complexity is not proportional to the size of the graph.
- Designing algorithms that are suitable for graph animation.

Applications include:

- Sketch-Based Interfaces
- Network and Software Visualization

**Background**

Background research in:

- **Social Networks**
  Stability of Importance Measures
- **Graph Theory**
  Geometric Random Spectral
- **Graph Drawing**
  Clustered Graphs
- **Average-Case Analysis**
  Algorithms Operating on a Metric Space

**Publications**

- (Under Review to GD2006) Imposing a Tree Structure on an Undirected Simple Graph.
- (In Progress) Subadditive Properties of Various Graph Drawing Techniques.
- (Presentation) Average Case Analysis of Wireless Networks.

**Future Work**

- Impose more General Structures on Graph.
- Approximation Algorithms to Work for Large Graphs.
- Investigate Applications of Current Research.