Workshop on Constraint Based Layout of Diagrams & Documents

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Motivation

• Automatic and semi-supervised layout is increasingly important
  – graph layout and other visualisation tools
  – diagram authoring tools
  – CAD/CAM
  – layout of newspaper articles and ads
  – widget layout and user interface specification
  – document authoring tools & browsers

• Currently these are treated in isolation

The aim of the workshop is to bring researchers from these different areas together
Constrained Optimization

• The applications vary in
  – Underlying visual notation
  – Degree and kind of user interaction
  – Solving techniques

• However, we believe that they can all be understood as constrained optimization problems

• Why is this useful?
  – Encourages clear separation of problem from solving method
  – Encourages use of standard generic techniques such as DP, A*, LP, NLP, MIP, SA, etc
  – Facilitates hybrid layout
  – Discourages fear of NP-hardness
  – .....
Outcomes

• Determine if it is useful to think of automatic layout in terms of constrained optimization. If so why?
• Identify common layout techniques and issues across the different applications
• Determine if it is useful to bring researchers from the different areas together
• Identify weaknesses of current approaches to automatic layout and how to improve these
Program

Introduction

Overview talks
- Constraint based graph layout (Tim Dwyer)
- Constraints in diagram authoring tools (Michael Wybrow)
- MIP methods in graph drawing (Martin Nöllenburg)
- Soft and interval constraints for layout of diagrams (Hiroshi Hosobe)
- Text and document layout (Kim Marriott)

Lunch

Breakout session A:
- Does constrained optimization help address these?
- Common issues, requirements, aesthetics and techniques for layout applications

Breakout session B:
- If automatic layout is so good why isn’t it used everywhere?
- What are the big unsolved issues?

Panel session: Bringing it all together
- What have we learned?
- Where to from here?