

Graph Drawing

Organisational matters

Antonios Symvonis
Fall semester 2024

Organisational

Lectures

- Wednesday 15:00-18:00 (lecture)
- Office hours: by appointment

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Evaluation

- written exam: 80%
- Written assignments: 20%
- Programming assignments: 20% bonus

Note Submit homework through “Helios”

Organisational

Lecture material – Slides

- Material produced by researcher at:



- Karlsruhe Institute of Technology (KIT)



- TU Wien



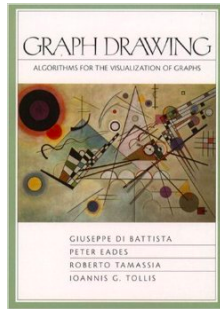
- U Wuerzburg

- On-going community effort
- Hosted at U Wuerzburg

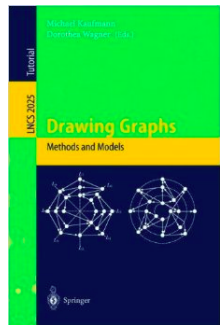


- U Konstanz

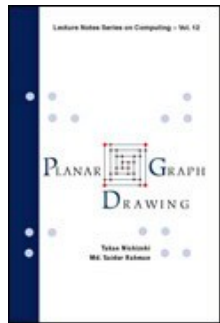
Books



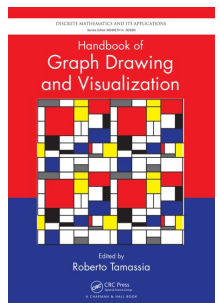
G. Di Battista, P. Eades, R. Tamassia, I. Tollis:
Graph Drawing: Algorithms for the Visualization of Graphs
Prentice Hall, 1998



M. Kaufmann, D. Wagner:
Drawing Graphs: Methods and Models
Springer, 2001



T. Nishizeki, Md. S. Rahman:
Planar Graph Drawing
World Scientific, 2004



R. Tamassia:
Handbook of Graph Drawing and Visualization
CRC Press, 2013

<http://cs.brown.edu/people/rtamassi/gdhandbook/>

What is this course about?

Learning Objectives:

- Overview of graph visualisation.
- Improved knowledge of modeling and solving problems via graph algorithms.

Visualisation problem:

- Given a graph G , visualise it with a drawing Γ .

Topics

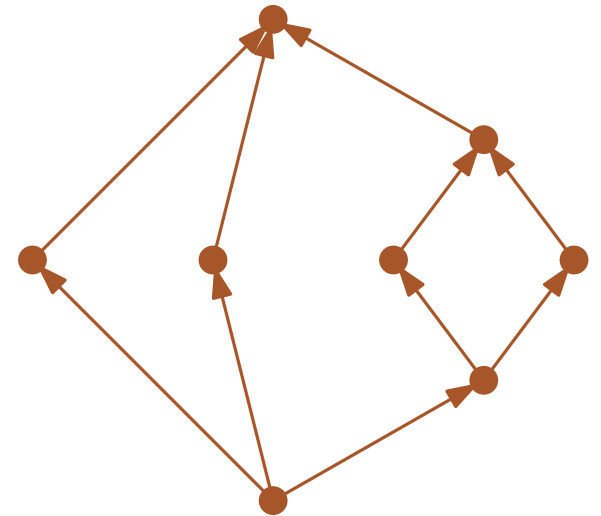
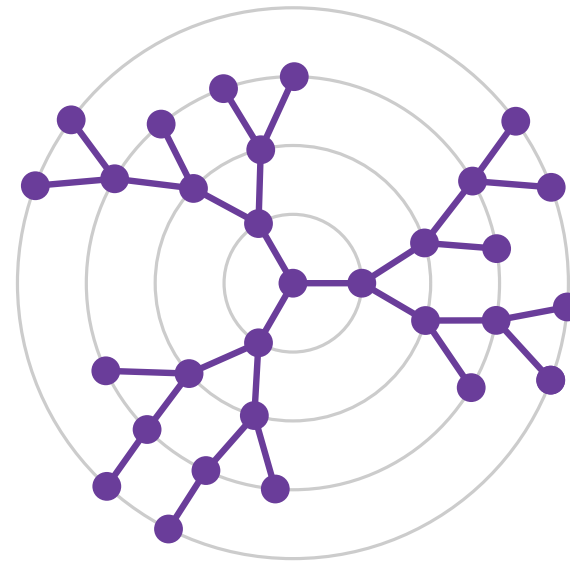
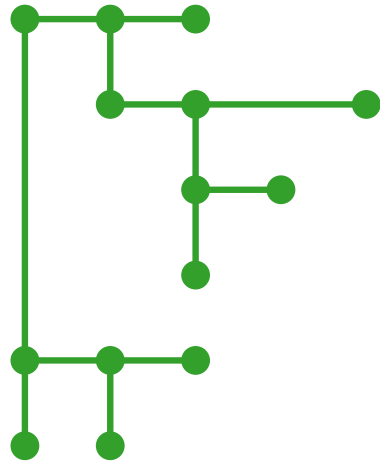
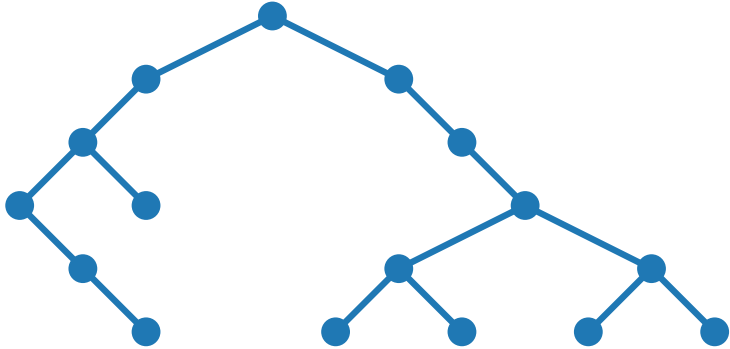
- Drawing trees and series-parallel graphs
- Straight-line drawings of planar graphs
- Orthogonal grid drawings
- Hierarchical layouts of directed graphs
- Force-based algorithm
- yFiles
- ...

Topics

■ yFiles

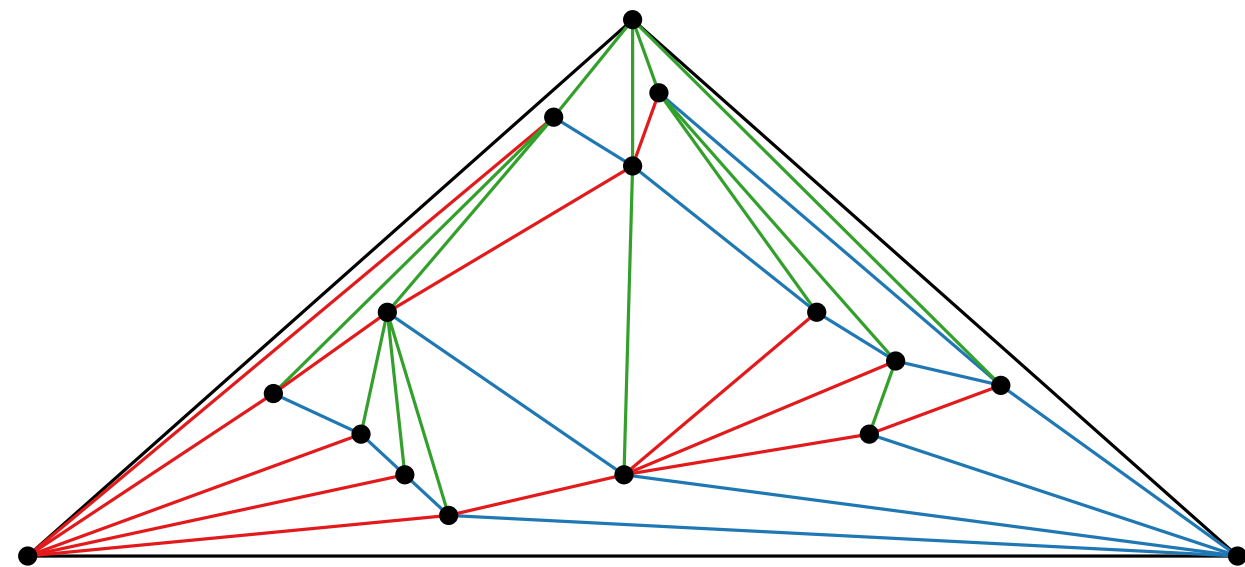
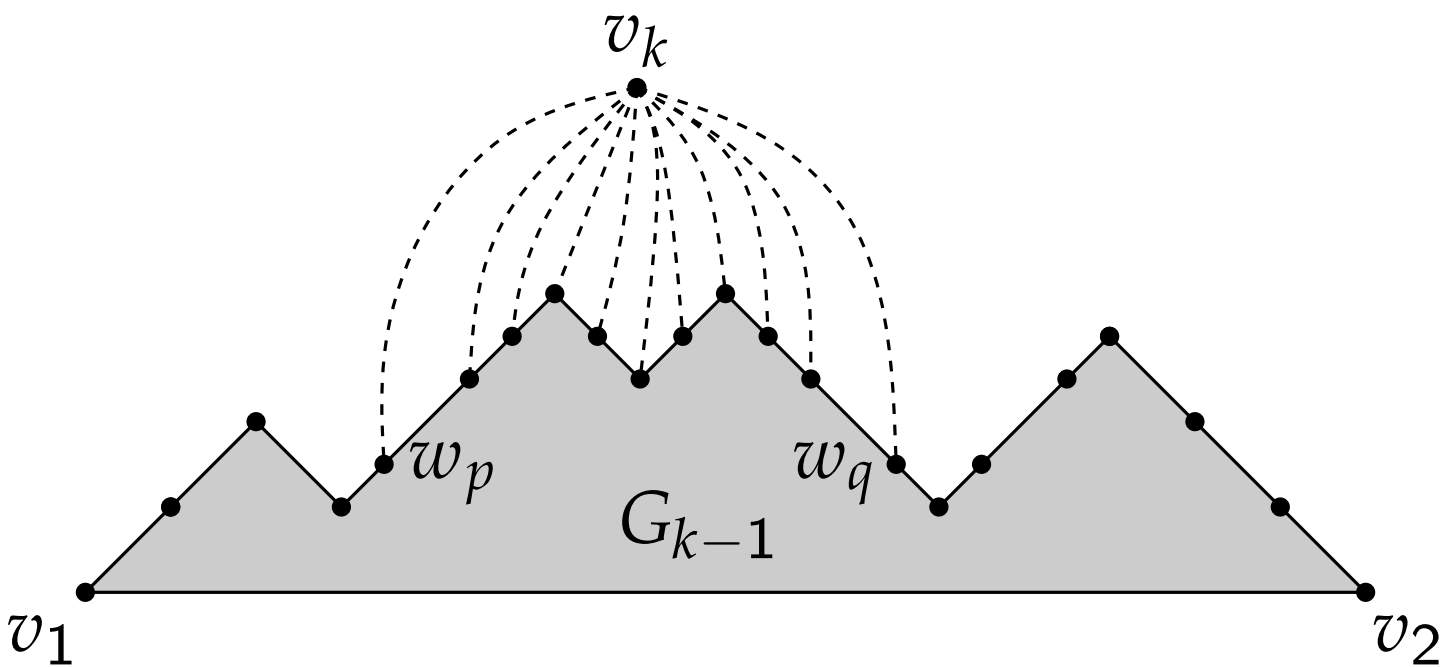
Topics

- yFiles
- Drawing trees and series-parallel graphs



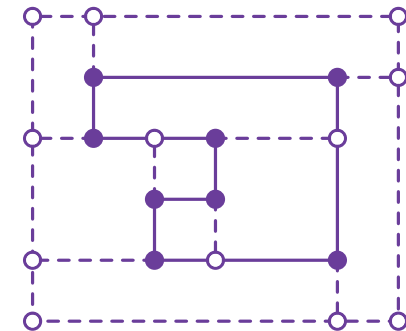
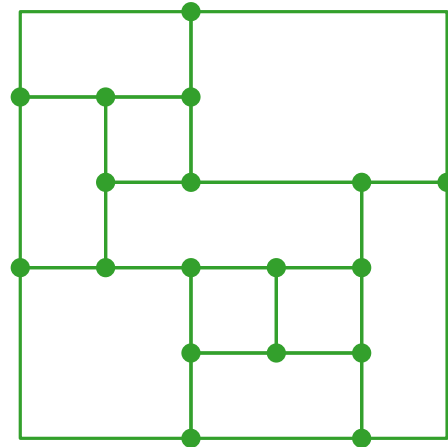
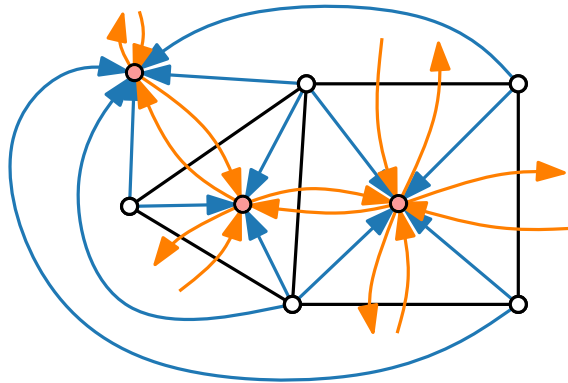
Topics

- yFiles
- Drawing trees and series-parallel graphs
- Straight-line drawings of planar graphs



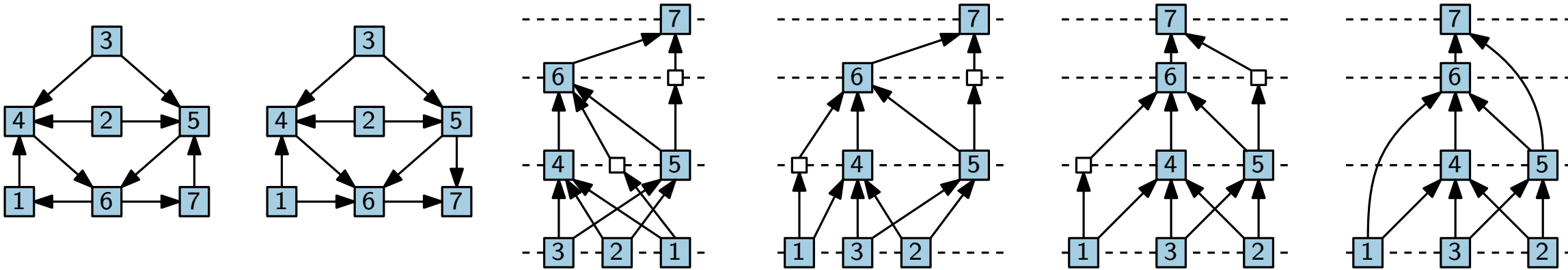
Topics

- yFiles
- Drawing trees and series-parallel graphs
- Straight-line drawings of planar graphs
- Orthogonal grid drawings



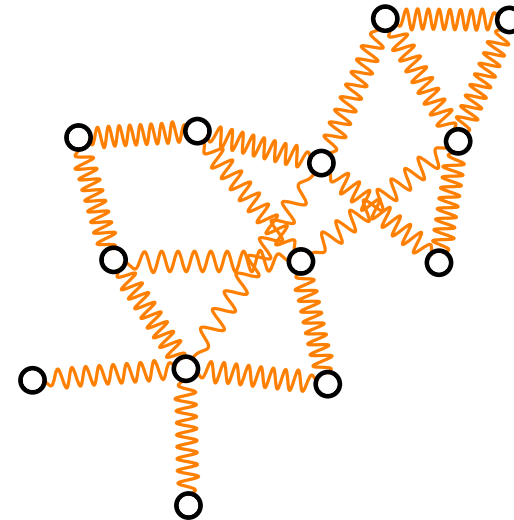
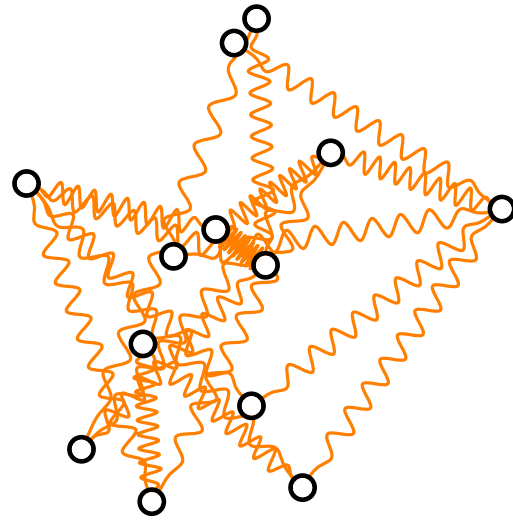
Topics

- yFiles
- Drawing trees and series-parallel graphs
- Straight-line drawings of planar graphs
- Orthogonal grid drawings
- Hierarchical layouts of directed graphs



Topics

- yFiles
- Drawing trees and series-parallel graphs
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- Force-based algorithm



Topics

- yFiles
- Drawing trees and series-parallel graphs
- Straight-line drawings of planar graphs
- Orthogonal grid drawings
- Hierarchical layouts of directed graphs
- Force-based algorithm
- Other
 - st-graphs & upward drawings
 - contact representations
 - crossing lemma
 - beyond planarity
 - monotone drawings
 - linear layouts
 - vertex-edge resolution
 - ...

Links

- **homepage**

http://www.math.ntua.gr/~symvonis/teaching/graph_visualization.html

- **Helios**

helios.ntua.gr

Registration Form

1. Registration is required
2. available at

http://www.math.ntua.gr/~symvonis/teaching/graph_visualization.html

- **contact:**

- symvonis@math.ntua.gr