

Graph Drawing

Organisational matters

Antonios Symvonis · Chrysanthi Raftopoulou
Fall semester 2022

Organisational

Lectures

- Monday 15:00-17:00 (lecture),
- Tuesday 17:00-18:00. (lecture/assignments/exercises)
- office hours: by appointment

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Evaluation

- written exam: 60%
- Programming assignments: 30%
- Written assignments: 10%

Notes

1. Submission of programming assignment is required in order to participate in final exam.
2. Submit homework through “Helios”

Organisational

Lecture material – Slides

- Material produced by researcher at:



- Karlsruhe Institute of Technology (KIT)



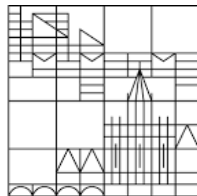
- TU Wien



- U Wuerzburg

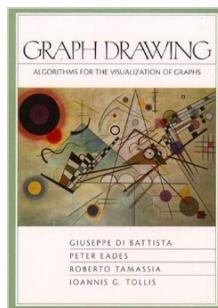
- On-going community effort
- Hosted at U Wuerzburg

Universität
Konstanz

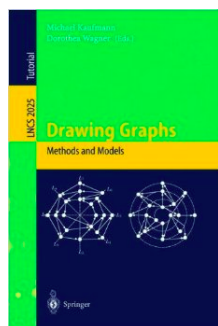


- U Konstanz

Books



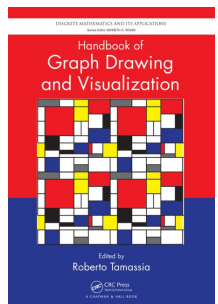
G. Di Battista, P. Eades, R. Tamassia, I. Tollis:
Graph Drawing: Algorithms for the Visualization of Graphs
Prentice Hall, 1998



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

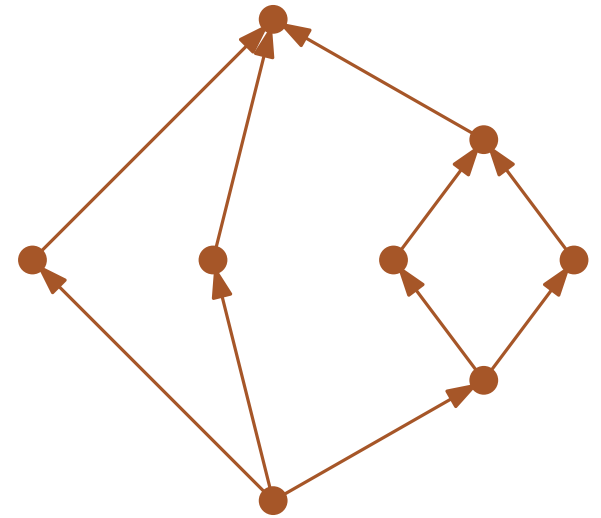
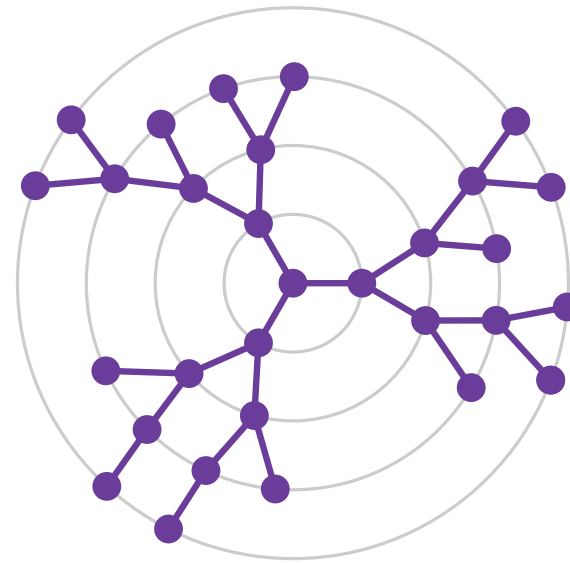
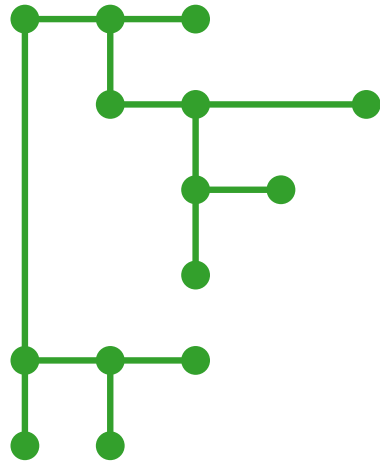
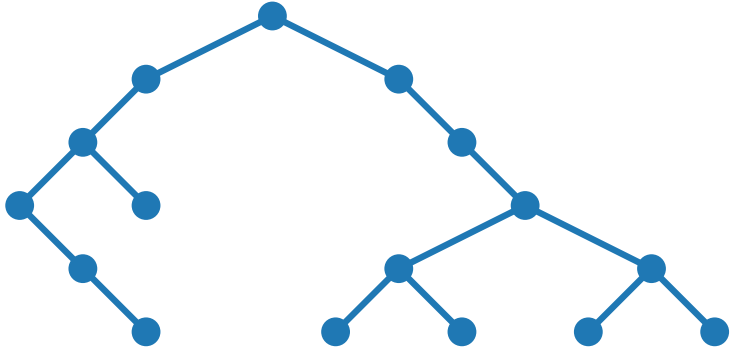
- Drawing trees and series-parallel graphs
- Straight-line drawings of planar graphs
- Orthogonal grid drawings
- Hierarchical layouts of directed graphs
- Force-based algorithm
- yFiles
- ...

Topics

- yFiles

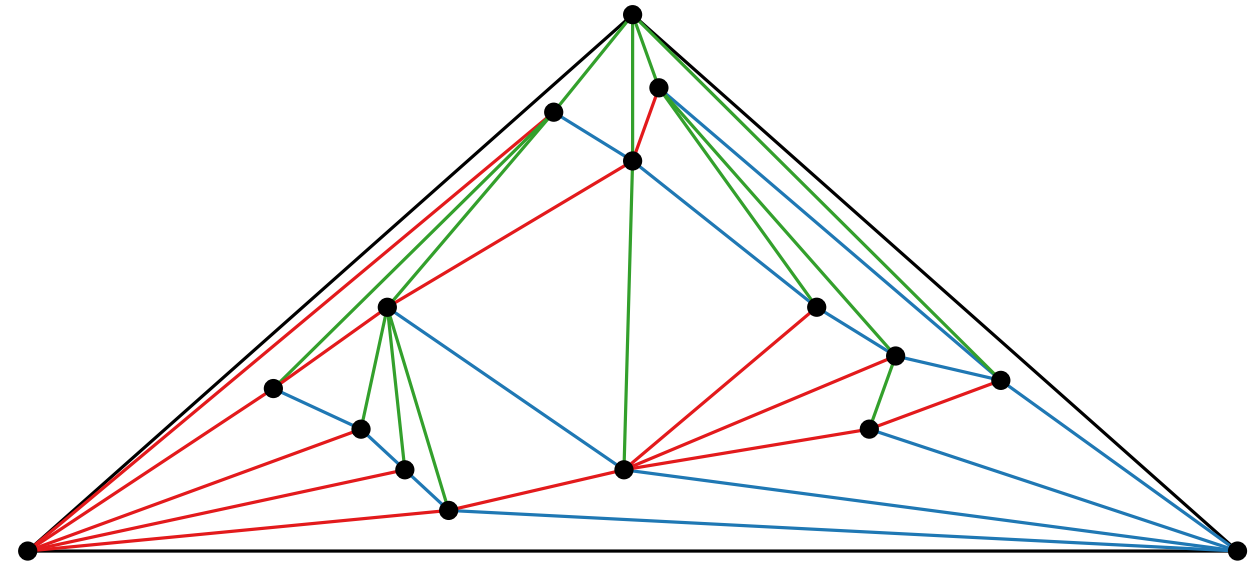
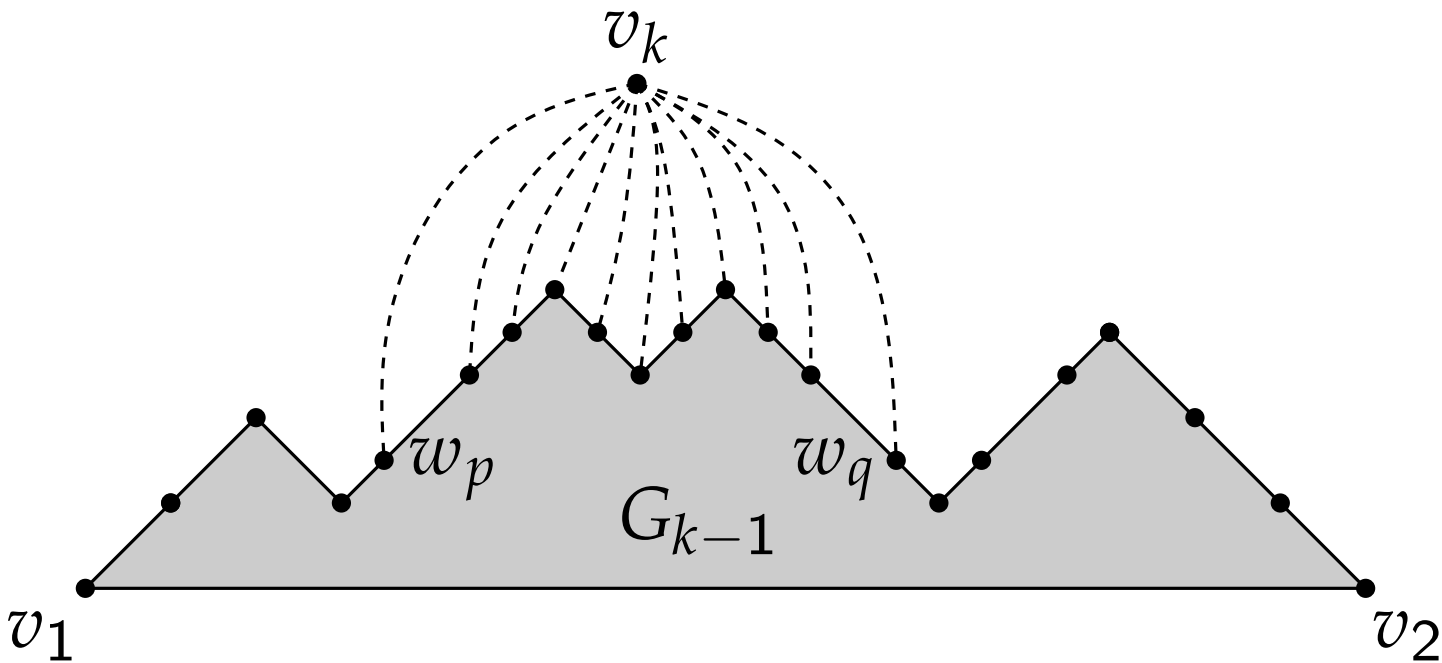
Topics

- yFiles
- Drawing trees and series-parallel graphs



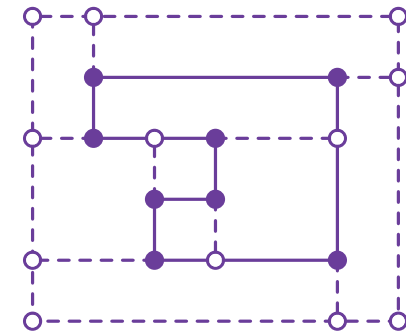
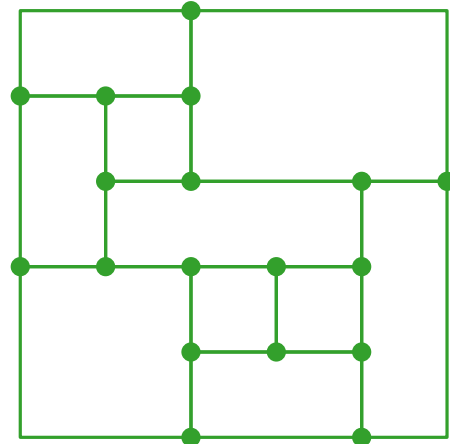
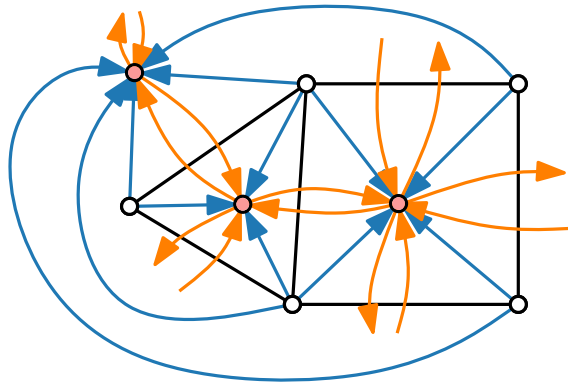
Topics

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



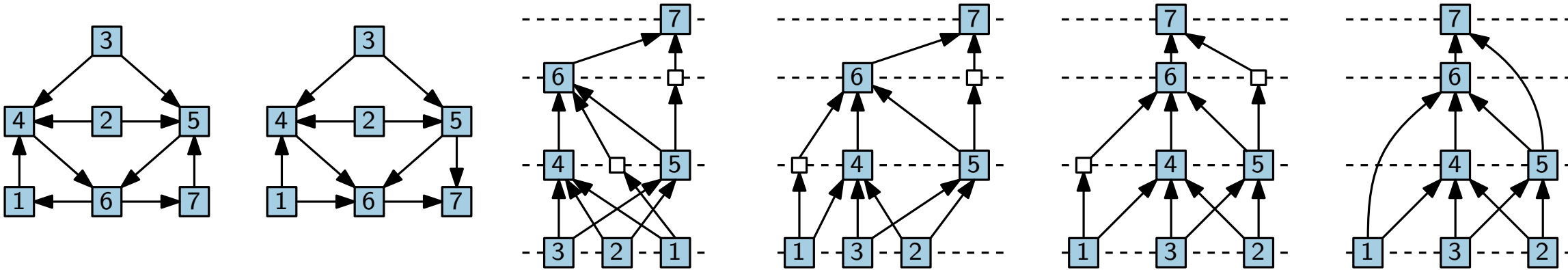
Topics

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



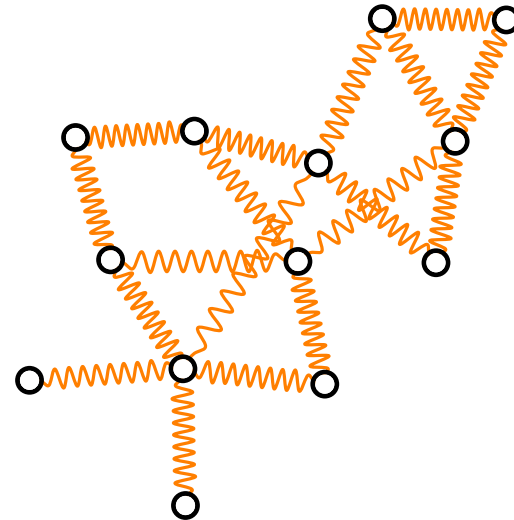
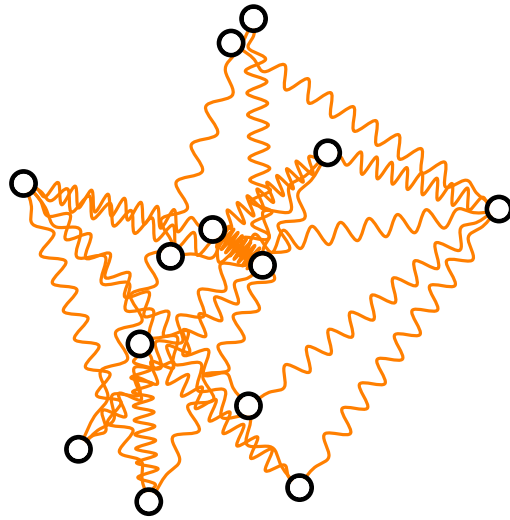
Topics

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



Topics

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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://aarg.math.ntua.gr/crisraft/course_3045.html

- **Helios**

helios.ntua.gr

Registration Form

1. Registration is required
2. available at http://aarg.math.ntua.gr/crisraft/course_3045.html

- **contact:**

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- crisraft@mail.ntua.gr