Social Network Analysis for Computer Scientists

F.W. Takes

Leiden University, The Netherlands

Peer review session
In the next weeks . . .

- Finish writing code
- Run experiments
- Evaluate results
- Write remaining sections of the paper
- In two weeks: optional intermediary paper check deadline
- In two weeks: code review session
- In around five weeks: hard project deadline
- Report any questions, issues, difficulties or problems
Peer review

- **Peer review**: evaluation of work by one or more individuals with similar competence
- Single blind: reviewer name unknown to authors
- Double blind: reviewer and author unknown to both
- As a scientist, on average, for each paper that you write, you need to do $X$ reviews assuming that you want $X$ reviews of your work
- For each existing paper, on average $X = 3$ reviews were written
- There are over 50 million peer reviewed papers, so over 150 million reviews!
Paper structure

1. Introduction
2. Problem Statement
3. Related Work
4. Algorithms
5. Datasets
6. Experiments
7. Results
8. Conclusion
9. Future Work
10. References
Introduction

- Is the problem well described?
- Why do we study this problem?
- What applications does it have?
- How is this paper going to contribute to previous work?
- Is the structure of the rest of the paper clearly described?
Problem statement

• Are definitions in words given?
• Are relevant formal definitions given?
• How difficult is this problem?
• Can you give best-case and worst-case examples?
• How can we verify that we have correctly solved the problem?
About the Algorithms/Techniques

- Are the algorithms well-explained?
- What type of algorithms are discussed (exact/approximate?)
- Are the algorithms time and memory efficient?
- What about scalability of the methods?
- Are any parameters involved? If so, how are they set or tuned?
- Is the technique domain-(in)dependent?
About the Data and Experiments

- Is the data relevant and sufficient?
- Is the data “diverse” in relevant dimensions?
- What do you measure in each experiment? quality, running time, error, correlation, . . . ?
- Why is this data good for these experiments?
- Is the data possibly biased and how may this affect the experimental results?
Other things

- Formula correctness
- Grammar, interpunction ., and spelling
- Figures, diagrams, axis descriptions, captions, etc.
- Complete and consistent references
- LaTeX
Remember . . .

Please be constructive!
Today

- Explain your work to the other team
- Mention what you have done and not yet done
- Discuss, ask questions, etc.
- Read the other team’s paper, make notes
- ...
- Explain to the other team positive and less positive constructive points about their work
- Write a short one-page report on the other team’s work and hand it in via e-mail, to both the other team and to f.w.takes@liacs.leidenuniv.nl
# Team pairs

<table>
<thead>
<tr>
<th>Team 1</th>
<th>Team 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shortest paths 1</td>
<td>Shortest paths 2</td>
</tr>
<tr>
<td>Betweenness centrality 1</td>
<td>Betweenness centrality 2</td>
</tr>
<tr>
<td>Influence spread 1</td>
<td>Influence spread 2</td>
</tr>
<tr>
<td>Visualization 1</td>
<td>Visualization 2</td>
</tr>
<tr>
<td>Counting triangles</td>
<td>Diameter computation</td>
</tr>
<tr>
<td>Network dissolution</td>
<td>Personalized PageRank</td>
</tr>
<tr>
<td>Network de-anonymization</td>
<td>Sampling methods</td>
</tr>
<tr>
<td>Link prediction</td>
<td>Signed link prediction</td>
</tr>
<tr>
<td>Disease spread</td>
<td>Minimum weight cycles</td>
</tr>
<tr>
<td>Neighborhoods</td>
<td>Graph compression</td>
</tr>
<tr>
<td>Closeness centrality 2</td>
<td>Community detection</td>
</tr>
<tr>
<td>Network motifs</td>
<td></td>
</tr>
</tbody>
</table>