ETH
Eidgenössische Technische Hochschule Zürich
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Distributed Computing

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MA/BA/SA:

I wanna find the very best

In a large variety of circumstances, we want to find a social choice as the result of the preferences of those making the choice. This problem arises when groups try to decide for a movie to watch, what restaurant to go to, in recommendation systems, when choosing the winner of a "best paper" award for a conference, and a myriad of other situations. The question is: how to rank the available options efficiently, given the preferences of the members of the group?

A number of methods have been proposed regarding how to rank, and we would like to compare their performance. Which produce rankings that perform best? Can we maybe combine them to breed better solutions? How do they perform on real-world data? Could we use them to build successful recommendation systems? All interesting methods of ranking are NP-hard, so we are planning to have a look at approximation algorithms and heuristics. Another possible direction is adapting them to an online scenario where we don't know all preferences initially, and they are revealed/learned over time.

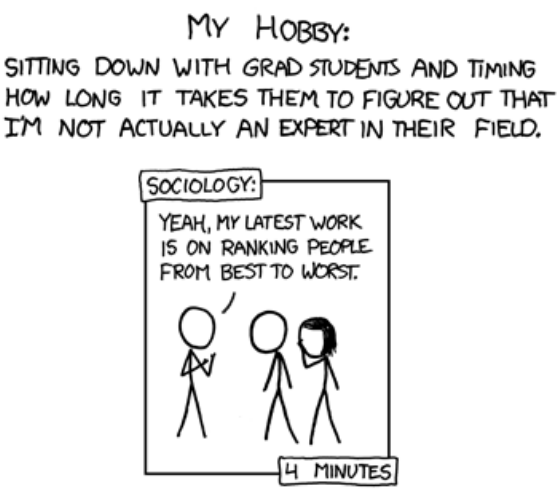

Figure 1: from http://xkcd.com/451/

We have a number of ideas for you to work on, and we will be excited to hear about any ideas you might have yourself! The topic is pretty large both in depth and width, so you can explore the niche that interests you most.

Requirements:

- In this thesis, you will write code, most likely in Java.
- An interest in algorithmic thinking will be helpful.
- You should be able to work independently on this topic.

Interested? If you are interested, we will be happy to hear from you and to have a small chat.

Contacts

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