Experience Report on a Student-Organized AI Course

27th annual ACM conference on Innovation and Technology in Computer Science Education - Session 4C

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Background

Image Sources: HHU, SICStus

They use Prolog
Prolog is used to implement AIs
We want to learn about AIs
...

Hey Sebastian, could you maybe realize a course on artificial intelligence?!

AI was not really one of our research topics - but why should all courses be based on the specializations of faculty members?

Course on Artificial Intelligence

Restrictions and Constraints

- Has to be created quite quickly
- Practically no resources for teaching left
- But there are well-designed books and requested topics

- Go for a classical seminar format
  with a common reading list, discussions and exercises

Smooth sailing

Until someone missed to set a limit on the number of students allowed to attend

Source: Unsplash

Rescue Attempt

Seek strength in numbers!

Source: Unsplash

„Students as 'co-producers' of education“

Kotzé and du Plessis

Attending Students

Some Statistics - over 100 students attending

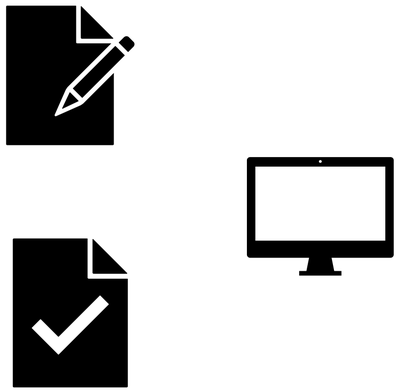
	first iteration	second iteration
bachelor	78.9%	100%
master	26.3%	27.3%

	first iteration	second iteration
female	23.1%	11.1%
male	76.9%	88.9%

semester	first iteration	second iteration
4	26.3%	45.5%
5	5.3%	18.2%
6	36.8%	9.1%
7	0%	18.2%
8	10.5%	9.1%
9	5.3%	0%
10	10.5%	0%

Course Outline

How did we organize a crowdsourced course?



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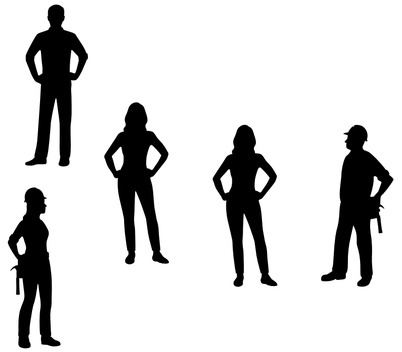
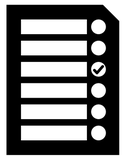
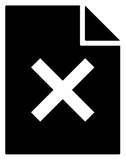
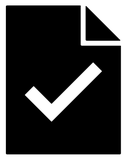
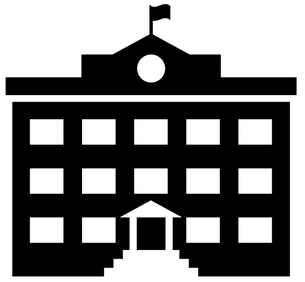


eLearning and Supporting Applications

What did we use to facilitate course execution?



Reliance on CS Background

Can our approach be reused in non-CS courses?

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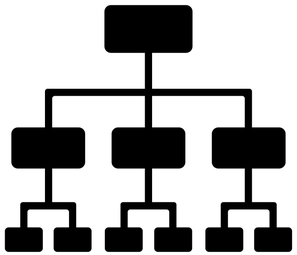
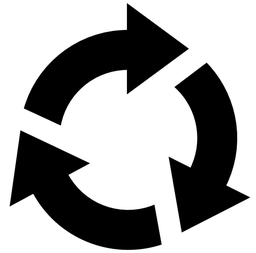




Assuring Learning Outcomes

Does the crowdsourcing approach diminish outcomes?

- Peer tutoring and feedback not diminishing outcomes in general, can be as effective as tutor feedback
  (see, e.g., Pirttinen et al., Hamer et al.)
- Creating questionnaires is beneficial for both sides
  (see, e.g., Denny et al.)
- Not really a representative study, but we were quite happy :-)

The lecturer’s knowledge remains the foundation of a successful course. The overall question is to what extent we have to use it for direct teaching rather than supporting tasks.

Student Feedback

Ways of Evaluation and Results

- Official evaluation performed by the university
  - No influence on question
  - Performed late in the semester
- Intermediate evaluations through LMS

Table 4: Course Evaluation, mean ($\bar{a}$) and median ($\tilde{m}$), scale from 1 (= total agreement) to 5 (= total disagreement)

	first iteration		second iteration	
	$\bar{a}$	$\tilde{m}$	$\bar{a}$	$\tilde{m}$
course is well-structured	2.3	2	1.5	2
course material is helpful	2.6	2	1.8	2
lecturer explains well	2.2	2	1.6	1
lecturer addresses questions		1	1.2	1
lecturer is motivated		1	1.2	1
satisfied with the course		2	2	2
was interested in topic bef		1	1.3	2
learning outcome was hig	3	3	2.1	2
lecturer support is helpful	1.6	1	1.5	1
course gives a good overview	2.2	2	1.6	2
good mixture of knowledge transfer and discussion	2.5	2	1.7	2

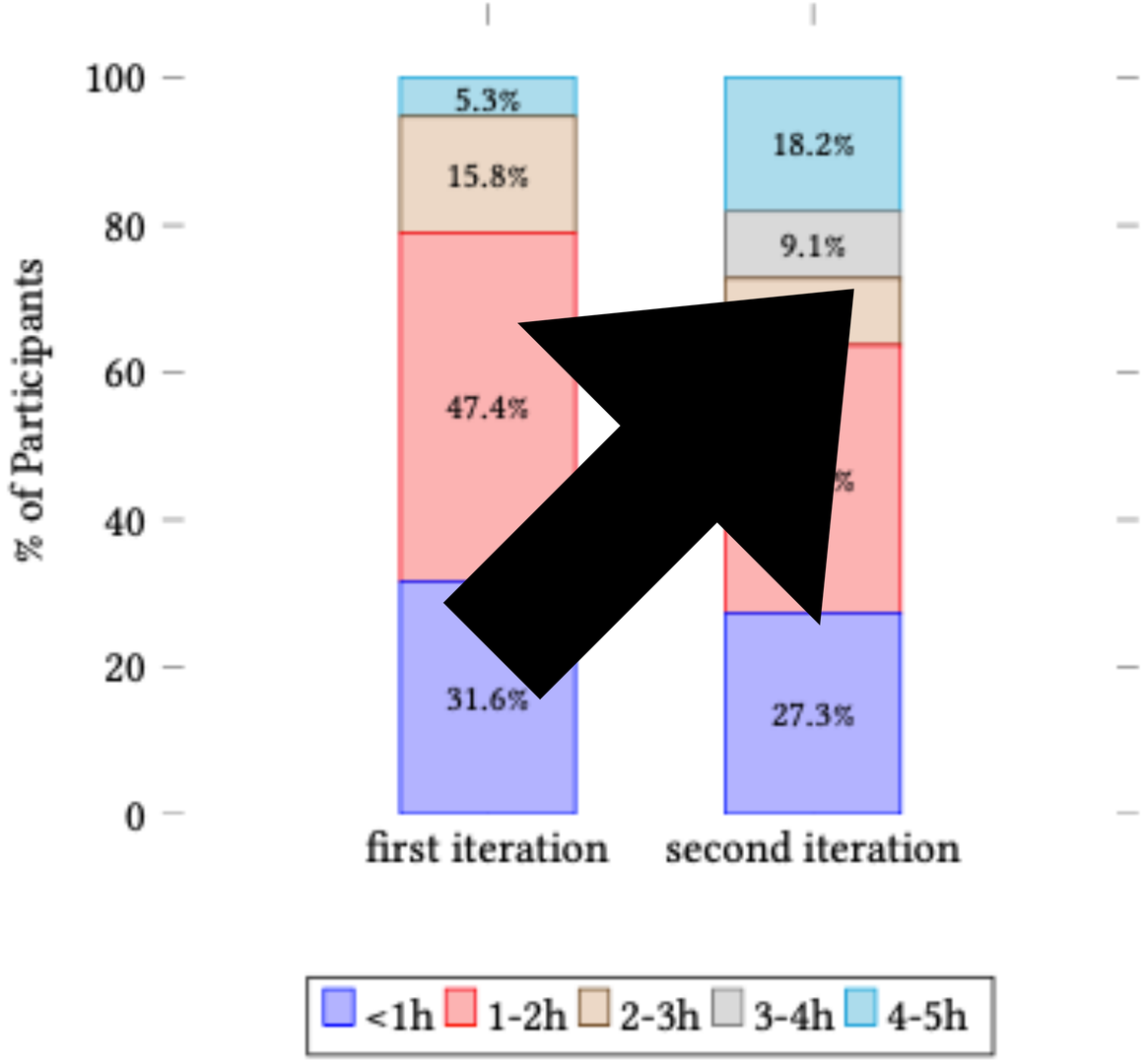


Figure 1: Weekly Time Spend for Preparation and Post-processing

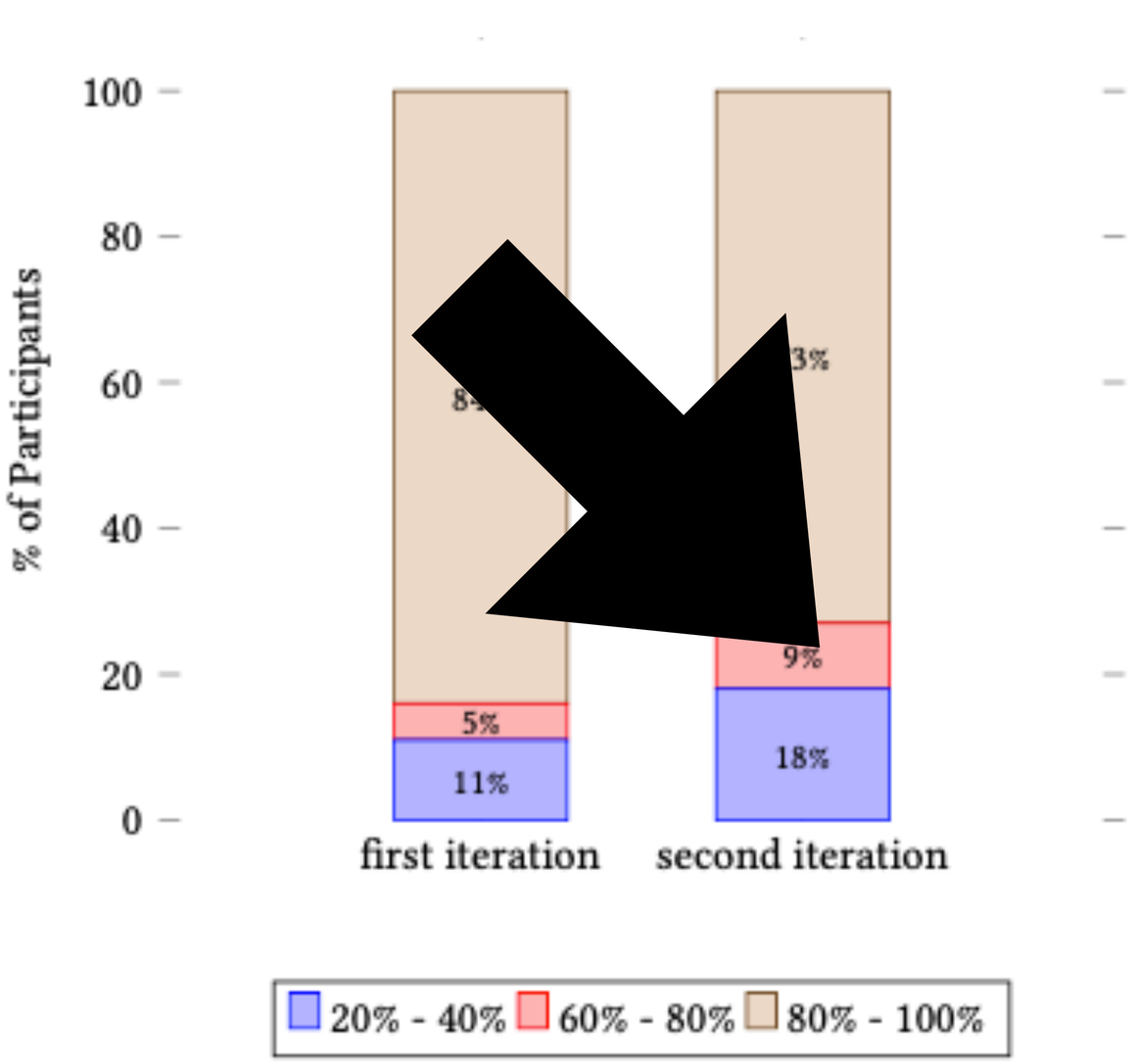
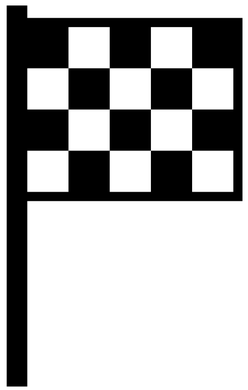
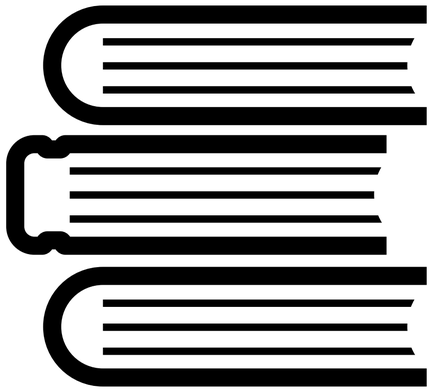


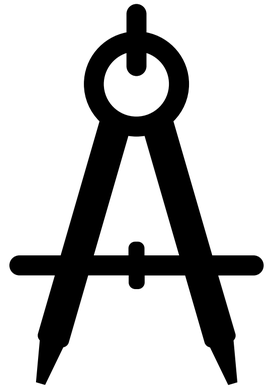
Figure 2: Percentage of Lectures Attended

Conclusions

Our Main Takeaways







Thank you!

Any Questions?