Course Analysis – DD2380 Artificial Intelligence Autumn 2023 (P2)

0. Author

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1. Description of the course evaluation process

The course evaluation process used the 22 statements LEQ. The goal was to assess their learning experience and identify opportunities for course improvement. By using this tool, all students were given the opportunity to provide feedback, and their responses were analyzed to ensure there were no issues related to gender or background. Additionally, feedback was gathered from student representatives during a meeting with the Master's programme in Computer Science (TCSCM).

2. Description of meetings with students

Several meetings were arranged with students during and after the course:

- Regular interactions during lectures to address questions and concerns.
- Post-course feedback sessions with two student representatives.
- Continuous support and feedback from Teaching Assistants (TAs) through consultation hours, tutorials, and lab sessions.
- Regular meetings between the instructor and TAs to ensure alignment and responsiveness to student needs.

The outcomes of these meetings are reported under section 7.

3. Course design

The course maintained most of the design from previous iterations, with adjustments to foster student interaction and integrity. It included lectures, tutorials, and lab sessions. Guest lecturers from various AI fields supplemented core lectures. The course involved PASS/FAIL elements such as a programming assignment on Logic and Planning, online

quizzes, and an essay on AI ethics and societal aspects. The final grade was determined by three main programming assignments evaluated through Kattis and in-person presentations. A significant change was made to the Ethics assignment and instructions to better integrate and detect academic misconduct and assess opportunities in the age of Large Language models.

4. Students' workload

The students' workload generally fell within expected parameters, averaging in the range of 12-17 hours per week, which aligns with the intended workload for a 6 credit course. As in previous iterations, some students reported the Hidden Markov Model (HMM) and search labs as more time-consuming, while the Reinforcement Learning module was seen as less time-consuming, leading to variable weekly workloads.

5. Students' results on the course

The performance on the course improved from previous years, with only 15.8% of students not achieving a passing grade. This alongside with the LEQ and other types of student feedback suggests that the learning material is being refined successfully and perhaps that the students are becoming even more committed given the high popularity of the topic.

6. Students' answers to open questions

Students provided specific advice on navigating the course and general impressions of their learning experience. Most students praised the breadth of the topics and assignments in the course (e.g., "The practical assignments were the best aspect of the course."). However, as mentioned in section 4 there were still some problems in the workload that we are always adapting to get it right (e.g., "The workload was very light at the beginning and heavy at the end of the period."). Some students also suggested direct and very easy to tweak changes on the instructions of assignments and booking of presentations that we will take for the next iteration.

7. Summary of students' opinions

Overall, students considered the course a positive learning experience, reflected in high LEQ scores, with most dimensions approaching 6 on a scale from 1 to 7. They appreciated the practical applications of AI and the support from TAs. From the LEQ scores, this year revealed the lowest rating on item 15 ("I could practice and receive feedback without being graded") which was rated 4.8 which is still positive but we will work on to improve.

8. Overall impression

The teaching team again felt satisfied with this year's course offering, especially in terms of student outcomes and their evaluation of the course. For this assessment I am also

using the information gotten from our traditional wrap-up dinner with TAs and meeting with student representatives. The high LEQ scores also indicate that students found the course beneficial and engaging. There are still some issues with streamlining and scheduling presentations. We will continue to try to work on our question banks to better detect academic misconduct, foster meaningful interactions and make it more consistent/fair within the three main assignments in the course.

9. Analysis

- **Stronger areas:**
  - Practical components of the course.
  - Interesting and relevant topics.
  - Support from Teaching Assistants.
- **Weaker areas:**
  - Variable workload between different modules.
  - Scheduling and TA variability inconsistencies in presentations.
- **Differences in experience:**
  - Gender: Slight difference in appreciation between male and female students, with male students slightly higher. This was due to the perception of item 15 (feedback) and 22 (support).
  - International/National students: Slight higher ratings from international students.

10. Prioritized course development

- **Short-term:** Continue to adjust the difficulty of the RL programming assignment to better match the other two modules. Implement direct suggestions from students to improve our instructions on assignments and presentations. Change the AI in Ethics and Society assignment to also encourage discussing using artificial intelligence to achieve Sustainable Development Goals (I developed this iteration of the assignment in the CDE KTH's teacher's course).
- **Long-term:** Continually update course content, prepare to in 2 iterations have a bigger redesign of the assignments with a new game with an even more rewarding interactive/visualization experience. This will also help prevent students from reusing old solutions that can be found online or from students that share code from previous years.

11. Other information you want to share

From the Ethics survey this year, we asked students to summarize if they used large language models when composing it and how did they use it. We have concluded that

the design of this learning team activity is successful and still promotes our learning objectives even if students use these tools. Many insights from this analysis was used in my docent presentation that was taken in May 2024. The main usages were summarizing group discussions and using it as a writing aid for non-native English speakers. We will not require students in future iterations to disclaim such information but it was extremely useful to analyse it.