Report - DD2421 - 2024-08-07

Please note that there is only one respondent to this form: the person that performs the course analysis.

Course analysis carried out by (name, e-mail):

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DESCRIPTION OF THE COURSE EVALUATION PROCESS
Describe the course evaluation process. Describe how all students have been given the possibility to give their opinions on the course. Describe how aspects regarding gender, and disabled students are investigated.

The students were given an opportunity to complete a course evaluation, the standard process using the format, without any exceptions.

DESCRIPTION OF MEETINGS WITH STUDENTS
Describe which meetings that has been arranged with students during the course and after its completion. (The outcomes of these meetings should be reported under 7, below.)

During the preparation period for each of the three labs, we arranged Q&A time slots when students can directly meet a TA one-to-one, in addition to the drop-in hours. During Lecture 12 (the final lecture) we spent some time for Q&A (after the mini-lectures). The course also had a communication channel with the students course committee (kursnämnden).

COURSE DESIGN
Briefly describe the course design (learning activities, examinations) and any changes that have been implemented since the last course offering.

VT24 (P3) was the 14th course round of DD2421 preceded by the one in HT23 (P1). Students were free to choose one of the two course rounds, and hence the two were meant to be similar.

The course provides an overview of the field of machine learning and describes a number of learning paradigms, algorithms, theoretical results and applications. It also covers some basic concepts of statistics, artificial intelligence and information theory relevant to machine learning. The course design was basically kept the same as in HT23 in terms of lectures, labs, and the format of written exams as well as the programming challenge.

Lectures were given by three teachers (6 by Atsuto Maki, 3 by Olov Andersson, 2 by Jörg Conradt, and the last lecture consisting of mini-lectures on topics for studying machine learning beyond the scope of the course.
The materials are mainly based on James et al. [1], Prince [2], and Rojas [3] for supplementary reading, all available online.
[1] An Introduction to Statistical Learning (2nd edition), G. James, D. Witten, T. Hastie, R. Tibshirani, and J. Taylor (Springer, 2023).
[2] Computer Vision: Models, Learning, and Inference, Simon J.D. Prince (Cambridge University Press, 2012).
[3] Neural Networks – a Systematic Introduction, R. Rojas (Springer-Verlag, 1996).
We made the lecture slides available on Canvas, as well as recordings made from the previous course rounds during pandemic.

Three lab assignments orally examined by a group of TAs: 1. Decision Trees, 2. Support Vector Machines, and 3. Boosting.

Written exam consisted of questions corresponding to a learning outcome (full point 42). The score from the programming challenge (full point 18) was added, making the total up to 60 points. It was graded in the range of A-F.
The number of students was 246, some 20+ students decreased VT23 (273). The total number of students stayed more or less the same, ca. 500 students.

THE STUDENTS' WORKLOAD
Does the students' workload correspond to the expected level (40 hours/1.5 credits)? If these is a significant deviation from the expected, what can be the reason?

The distribution of students' workload appears to be reasonable with respect to the expected level while it was slightly shifted towards shorter hours per week compared to previous course rounds.
A few sampled comments: "A normal workload","felt OK with regards to work load". They sounded to have found it reasonable.

THE STUDENTS' RESULTS
How well have the students succeeded on the course? If there are significant differences compared to previous course offerings, what can be the reason?

The highest number of students received 'B' or 'C', both by 54, followed by 'A' by 43, 'D' by 28, and then 'E' by four of them. The number of students that failed was 20. Overall distribution is similar to HT23, but the number of students who received 'A' has slightly increased.

STUDENTS´ANSWERS TO OPEN QUESTIONS
What does students say in response to the open questions?

Some positive comments included: "Really interesting material. Great teachers and I did like the challenge a lot","Fun and interesting concepts and nice variation of professors", "The labs were a really good way of putting knowledge from the course into practice", "Far above average lecturers". Some others requested for more, e.g. to make them "implement a proper code for these methods instead of using the libraries", not to "spend too much tie answering simple questions from one student", which makes good sense.
Apart from these, in this course rounds there were no remarks against the programming challenge, on its schedule nor on the way that the results are communicated, although just in HT23 some specific opinions appeared from few students.

SUMMARY OF STUDENTS' OPINIONS
Summarize the outcome of the questionnaire, as well as opinions emerging at meetings with students.

Largely well accepted as a nice course, as in the previous course rounds.

OVERALL IMPRESSION
Summarize the teachers' overall impressions of the course offering in relation to students' results and their evaluation of the course, as well as in relation to the changes implemented since last course offering.

The over shape of the polar diagram looked similar to VT23, mostly balanced but the scores increased almost on all items. We saw increases (> 1 point) on a few items including 10. I was able to learn from concrete examples that I could relate to, and I understood what I was expected to learn in order to obtain a certain grade.
As usual two exceptions of lower scores were: 5. I felt togetherness with others on the course, and 20. I had opportunities to influence the course activities, although the scores on those have also increased, especially on 20.

ANALYSIS
Is it possible to identify stronger and weaker areas in the learning environment based on the information you have gathered during the evaluation and analysis process? What can the reason for these be? Are there significant difference in experience between:
- students identifying as female and male?
- international and national students?
- students with or without disabilities?

Due to the low number of answers analyses not available this time.

PRIORITIZED COURSE DEVELOPMENT
What aspects of the course should be developed primaily? How can these aspects be developed in short and long term?

This was the 14th course round as stated above, and the course appears to be well established through revisions of contents. According to students' feedback we keep some aspects for further improvements in the medium/long term:
• written exercises in some form / adding extra study sessions (though it would require more resources),
• adding another lab / involving more coding
Those remain the same as the items mentioned for the course round P1.

OTHER INFORMATION
Is there anything else you would like to add?

The programming challenge coordinated by Olov Andersson. The team of TAs headed by Alex Kozlov. Gratefully acknowledged.