

Report - DD2421 - 2023-11-14

Respondents: 1
Answer Count: 1
Answer Frequency: 100.00%

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 three 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.

VT23 (P3) was the 12th course round of DD2421 preceded by the one in HT22 (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 HT22 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 Bob Sturm, 2 by Jörg Conrad, and the last lecture consisting of three mini-lectures by all 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, G. James, D. Witten, T. Hastie and R. Tibshirani (Springer, 2013).

[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 273, more or less the same as in VT22.

THE STUDENTS' WORKLOAD

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

All in all the distribution of students' workload appears to correspond to the expected level.

Some comments: "Workload was fine", "Quite ok", "Very well defined course to cover the introduction to machine learning", but some other said "fairly simple". Of course it's up to individuals with different background but it looks reasonable in average.

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 'C', 73, followed by 'B', 'D', and then 'A' by 26 students. The number of students that failed was 26.

STUDENTS' ANSWERS TO OPEN QUESTIONS

What does students say in response to the open questions?

Some positive aspects in comments such as "Solid course for so many students.", "The programming challenge, and the teachers' enthusiasm.", "I liked that the course was quite broad, i.e., covered a lot of different areas. This resulted in a broad understanding over the concept of ML which I feel is the most important aspect of this introduction course to machine learning. So, well done." while some others request for more exercises, e.g. "I would like more exercises to practice on.", "It would be helpful to have some kind of written homework which helps you to prepare for the exam apart from the labs." which may be considered if available considering the scale of the course.

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 shape of the polar diagram looked similar to VT22, mostly balanced but with exceptions of lower scores in two items as is always the case with this course: 5. I felt togetherness with others on the course, and especially 20. I had opportunities to influence the course activities. Those can be seen natural considering the large number of participants.

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 primarily? How can these aspects be developed in short and long term?

This was the 12th 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

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 designed and coordinated by Bob Sturm. The team of TAs headed by Alex Kozlov. Gratefully acknowledged.
