kthlogo

Course analysis

Analysis template updated Feb 2020.

(An English version can be selected above.)

Using this form, you can create a course analysis based on an LEQ report. When you save the form, a draft will be created. As long as the course analysis is not finished, you can edit the form and create a new draft. Note that an English version of this form is used in the report, as the system does not currently support multilingual reports.

The course analysis will only be available to examiners and teachers on the course. Further publication and distribution is handled by the teacher responsible for the course.

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 opportunity to give their opinions on the course. Describe how aspects regarding gender, and disabled students are investigated.

We had canvas for discussion during the course.A course evaluation was provided at the end of the course for feedback.

DESCRIPTION OF MEETINGS WITH STUDENTS Describe which meetings that have been arranged with students during the course and after its completion.

There were no official meetings with students.

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

This course marries data-parallel programming with machine learning (ML) and deep learning (DL), and helps students to work on distributed ML/DL problems with big datasets. At the end of the course, students will be familiar with the main ML/DL algorithms and know how to implement them using data-parallel programming platforms, such as Spark and TensorFlow/PyTorch, on a cluster of computers and apply them on massive datasets. This course has a system-based focus, that is, students will learn not only the theory of ML/DL but also the practical aspects of building large-scale systems that take advantage of ML and DL.   After the course the student should be able to:
1. ILO1: explain the principles of supervised and supervised ML algorithms and apply their techniques to solve problems.
2. ILO2: explain the principles of DL algorithms, such as learning in deep neural networks (DNN) and training techniques.
3. ILO3: explain different DNN architectures, such as convolutional neural networks (CNN), recurrent neural networks (RNN), autoencoders, etc., and know how to build and train such networks.
4. ILO4: build ML algorithms using Spark.
5. ILO5: build DL algorithms using TensorFlow or PyTorch.
6. ILO6: build advanced applications using Spark and TensorFlow/PyTorch, and make scalable applications on a cluster, and process massive data.
The course consists of a number of tasks, in which each one assesses different ILOs.
1. Task1 (two lab assignments): in these labs, students will work with different ML/DL models and will implement them using TensorFlow or PyTorch. (A-D, F)
2. Task2 (the final project): the purpose of this task is to implement an advanced ML/DL application for processing massive data (which should be proposed by students and confirmed by the teacher) on a cluster. (A-D, F)

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

In the evaluations, it was ok.

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

Similar to previous years.

STUDENTS'ANSWERS TO OPEN QUESTIONS What do students say in response to the open questions?

In general, the students found the course interesting and practical. Things that can be improved are communication from the teacher and TAs.

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

The course is a well liked course that brings a unique practical perspective to building AI systems, not just theory.

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 the last course offering.

In general, the course is popular and the projects are a great way for students to showcase their skills. It has been the only course, globally, that builds AI systems - not just trains models. But with LLMs, there will be many of these courses soon.

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 be? Are there significant differences in experience between:
- students identifying as female/male?
- international/national students?
- students with/without disabilities?

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

> LLMs should be given more focus, as well as more MLOps

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

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