

Machine Learning and Data Mining

Course logistics

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September 10, 2018

`github.com/HSE-LaMBDA/ml dm-2018`

Two parts:

- traditional learning;
- deep learning.

Home Assignments

3 home assignments ("homeworks"):

- each consist of a number of exercises;
- 2 weeks for submitting homework;
 - each additional week: 0.25 points penalty;
- final score for an assignment:

$$\max \left[1, \sum_i \text{exercise}_i \right] - \text{penalty}$$

**Home assignments must be your own work.
Tools allowed for use will be specified in homework
descriptions.**

Exam

Exam:

- a presentation on Machine Learning challenge you took part in:
 - a non-trivial solution;
 - elaborate on method/features/... you chose.
- overview of an advanced Machine Learning paper:
 - some suggestions will be on lectures (under Further Reading etc);
 - a list of preapproved advanced papers will be provided.

**Please, discuss your choice with me beforehand,
send me paper/draft of your presentation in advance.**

Final grades

$$\text{Final grade} = 50\% \cdot \text{homeworks} + 50\% \cdot \text{exam}$$

$$\text{Final grade} = \left[\frac{5}{3} \cdot \text{homework score} + \frac{1}{2} \cdot \text{exam score} \right]$$

where:

- homework score - sum of all marks for the homeworks (max 1 per each, max 3 in total);
- exam score - mark on the exam, max 10.

- Friedman J, Hastie T, Tibshirani R. The elements of statistical learning. New York, NY, USA:: Springer series in statistics; 2001.
- Bishop C. Neural networks for pattern recognition. Oxford university press; 1995 Nov 23.
- Bishop C. Pattern recognition and machine learning.

Deep Learning course

There is an excellent course on Deep Learning:

- <https://www.hse.ru/edu/courses/222120421>

which intersects heavily with the program of this course.

If **all** students agree:

- to attend the Deep Learning course;

then:

- this course will be devoted to advanced topics;

otherwise:

- an 'ordinary' (and compressed) Deep Learning course will be presented.