

# **Machine Learning and Data Mining**

Course logistics

---

Maxim Borisyak

Constructor University Bremen

February 9, 2026

# Structure

---

[github.com/CUB-CKL/mldm-2026](https://github.com/CUB-CKL/mldm-2026)

# Course

---

- fundamentals of statistics;
- linear and kernel models;
- decision trees and ensembles;
- recommendation systems;
- deep learning.

## Home Assignments

---

2 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

---

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

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

where:

- homework score - sum of all marks for the homeworks (max 1 per each, max 2 in total);
- exam score - mark on the exam, max 10.

## Literature

---

- 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.