3D geoinformation
Department of Urbanism
Faculty of Architecture and the Built Environment
Delft University of Technology

GEO5017
Machine Learning for the Built Environment

https://3d.bk.tudelft.nl/courses/geo5017/

About the final exam

Liangliang Nan

https://3d.bk.tudelft.nl/liangliang/

The topics

- Introduction to machine learning
- Unsupervised learning
- Nearest neighbor classification & Linear regression
- Bayesian classification & logistic regression
- Support vector machine (SVM)
- Decision trees and random forest
- Neural networks
- Deep learning

Learning objectives

- Explain the main concepts in machine learning (e.g., regression, classification, unsupervised learning, supervised learning, overfitting, training, validation, cross-validation);
- Explain the principles of commonly used unsupervised and supervised machine learning techniques (e.g., clustering, linear regression, logistic regression, SVM, random forest, and neural networks);
- Collect and pre-process data (e.g., labelling, normalization, feature selection, augmentation, train-test splitting) for applying machine learning techniques;
- Select and apply the appropriate machine learning method for a specific geospatial data processing task (e.g., object classification);
- Analyze and evaluate the performance of machine learning models.

Final exam

- Assignments (40%)
- Final exam (60%):
  - Lectures, handouts, assignments, demo code …
    - Multiple-choice questions
    - Open questions
- Pass?
  - Assignments >= 5.5
  - Exam >= 5.5
  - Total of 6.0 or above

Exam questions

https://3d.bk.tudelft.nl/courses/geo5017/exam/GEO1017-ExampleQuestions.pdf