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(/learn/ml-
classification/home/welcome)

Boosting

One of the most exciting theoretical questions that have been asked about machine learning is whether simple

⌄ More

The amazing idea of boosting a classifier

Start Lesson

(/learn/ml-
classification/lecture/3ywWA/the-
boosting-question)

● **Slides presented in this module**

(/learn/ml-classification/supplement/07FKm/slides-
presented-in-this-module)

▶ **The boosting question** 4 min

(/learn/ml-classification/lecture/3ywWA/the-boosting-

question)

(▶) Ensemble classifiers   5 min

(/learn/ml-classification/lecture/lAous/ensemble-
classifiers)

(▶) Boosting   6 min

(/learn/ml-classification/lecture/rV0iX/boosting)

AdaBoost

(▶) AdaBoost overview   3 min

(/learn/ml-classification/lecture/oyMBd/adaboost-
overview)

(▶) Weighted error   5 min

(/learn/ml-classification/lecture/vR1RK/weighted-
error)

(▶) Computing coefficient of each
ensemble component   5 min

(/learn/ml-classification/lecture/t4tAK/computing-
coefficient-of-each-ensemble-component)

(▶) Reweighing data to focus on
mistakes   5 min

(/learn/ml-classification/lecture/in5T5/reweighing-
data-to-focus-on-mistakes)

(▶) Normalizing weights   2 min

(/learn/ml-classification/lecture/LqKAF/normalizing-
weights)

Applying AdaBoost

(▶) Example of AdaBoost in
action   5 min

(/learn/ml-classification/lecture/um0cX/example-of-
adaboost-in-action)

(▶) Learning boosted decision
stumps with AdaBoost   4 min

(/learn/ml-classification/lecture/bx5YA/learning-
boosted-decision-stumps-with-adaboost)

Programming Assignment 1

⚫ Exploring Ensemble Methods

(/learn/ml-
classification/supplement/aMrDF/exploring-
ensemble-methods)

⭐ **Quiz:** Exploring Ensemble
Methods   10 questions

(/learn/ml-classification/exam/FgzAt/exploring-
ensemble-methods)

Convergence and overfitting in boosting

▶ The Boosting Theorem   4 min

(/learn/ml-classification/lecture/hvl3Z/the-boosting-
theorem)

▶ Overfitting in boosting   6 min

(/learn/ml-classification/lecture/8SGv8/overfitting-in-
boosting)

Summarizing boosting

▶ Ensemble methods, impact of
boosting & quick recap   4 min

(/learn/ml-classification/lecture/bQqTw/ensemble-
methods-impact-of-boosting-quick-recap)

⭐ **Quiz:** Boosting   11 questions

(/learn/ml-classification/exam/UTPiQ/boosting)

Programming Assignment 2

⚫ Boosting a decision stump

(/learn/ml-classification/supplement/3TYwk/boosting-
a-decision-stump)

Quiz: Boosting a decision stump   6 questions

(/learn/ml-classification/exam/0Z2ax/boosting-a-decision-stump)