

Practical Machine Learning Notes

Coursera Course by John Hopkins University

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Intro

GitHub Link for Lectures

Practical Machine Learning lectures on GitHub

Course Book

The book for this course is available on this site

Instructor's Note

"Welcome to Practical Machine Learning! This course will focus on developing the tools and techniques for understanding, building, and testing prediction functions.

These tools are at the center of the Data Science revolution. Many researchers, companies, and governmental organizations would like to use the cheap and abundant data they are collecting to predict what customers will like, what services to offer, or how to improve people's lives.

Jeff Leek and the Data Science Track Team"

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Prediction, Errors, and Cross Validation

Prediction

Prediction Motivation

What is Prediction?

Relative Importance of Steps

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Errors

In and Out of Sample Errors

Prediction Study Design

Types of Errors

Receiver Operating Characteristics

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Cross Validation

Cross Validation

What Data Should You Use?

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Quiz 1

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The Caret Package

Caret Package

Caret Package

Training Options

Plotting Predictors

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Preprocessing

Basic Preprocessing

Covariate Creation

Preprocessing with Principal Components Analysis (PCA)

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Predicting

Predicting with Regression

Predicting with Regression Multiple Covariates

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Quiz 2

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Predicting with Trees, Random Forests, & Model Based Predictions

Trees

Predicting with Trees

Bagging

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Random Forests

Random Forests

Boosting

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Model Baded Predictions

Model Based Predictions

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Quiz 3

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Regularized Regression and Combining Predictors

Regularized Regression

Combining Predictors

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Forecasting

Unsupervised Prediction

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Quiz 4

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Course Project

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