



# Machine Learning for Applications in Computer Vision

# What you will learn in the practical course

- ML Applications in Computer Vision
- Practical experience with the most common ML methods
  - Support Vector Machines
  - Tree-based Classifiers
  - Neural Networks and Deep Learning
  - Gaussian Process Classifiers
  - Boosting Methods
- Benefits/drawbacks of the certain methods when applied to concrete, relevant problems
- Practical project experience
- Presentation skills



# Course Organisation

- Class Date : Every Friday at 9-11am.
- Classroom : Seminar Room 02.09.023
- Student Lab will be open for students: 02.05.014
- Computers in the lab are equipped with the required hardware.
- Students will work in groups: ideally 6 groups, each has 3 students.
- Every group will be assigned to one advisor.



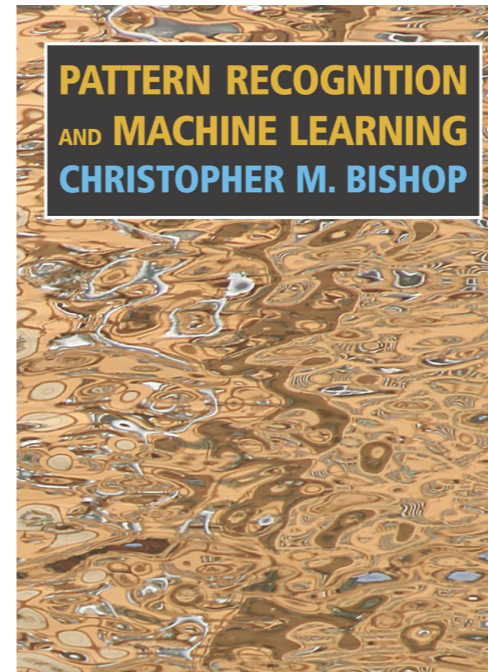
# Course Structure

- There will be 3 weeks course/exercise sessions
  - 17. April 2015 : SVMs and Tree-based Classifiers
  - 24. April 2015 : ANN and Deep Learning
  - 08. May 2015 : GP Classifiers and Boosting Methods
- Every week two topic will be presented and one exercise sheet including practical/theoretical questions will be given.
- Solutions to the exercises must be presented in the following week to the group advisor.
- In the project phase, one project to each group
- Students can use lab computers and ask their questions to the group advisor in class hours.

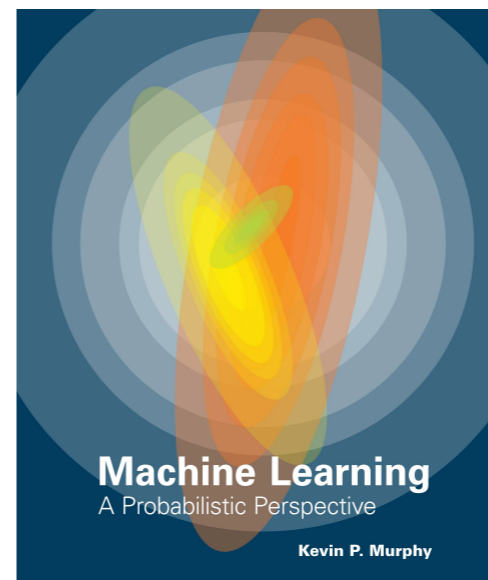


# Literature

- Pattern Recognition and Machine Learning by Christopher M. Bishop



- Machine Learning: a Probabilistic Perspective by Kevin P. Murphy



# Hints for Your Talk

- 20 min. + 5–10 min. for discussion
- Don't put too much information on one slide
  - 1-2 min. per slide → 10-20 slides
- Recommended structure
  - Introduction, Problem Motivation, Outline
  - Approach
  - Experimental results
  - Discussion
  - Summary of (scientific) contributions



# Evaluation Criteria

- Successful completion of the exercises
- Gained expertise in the topic
- Quality of your talk



# Regular Attendance Is Required

- Attendance at classes/exercises is mandatory
- In case of absence: Medical attest





**Enjoy the practical course!**

