

Computer Science Department

University of Verona

A.A. 2015-16

# **Pattern Recognition**

Preliminaries

# The teacher

- Prof. Marco Cristani
- Computer Science Dept  
Ca' Vignal 2, 1st floor, room n. 47 (east branch)  
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Phone: 045 802 7841
- Office hours:
  - Monday, 10.00 - 11.30AM (better to have an appointment)

# General info

- Theoretical and practical lessons (MATLAB, gamma)
- Material:
  - course slides (italiano/inglese),
  - books
    - Richard O. Duda, Peter E. Hart, and David G. Stork. 2000. Pattern Classification (2nd Edition). Wiley-Interscience.
    - Christopher M. Bishop. 2006. Pattern Recognition and Machine Learning (Information Science and Statistics). Springer-Verlag New York, Inc., Secaucus, NJ, USA.

# General info

- Lab: VIPS (Vision, Image Processing & Sound), CV2, floor -2.

Info: <http://vips.sci.univr.it>



# Exam details

- oral exam

# Goals



# Course content

*Statistical pattern recognition on heterogeneous data*

- Introduction
- Bayes decision theory
- Fisher Discriminant Analysis, Principal Component Analysis
- Linear and non linear classifiers
- Model learning (parameter estimation, non parametric models)
- Mixtures of Gaussians, EM

# Course content

- Generative and discriminative classification
- Kernel methods and Support Vector Machines
- Hidden Markov Models
- Clustering