Supervised learning for computer vision:
Theory and algorithms - Introduction

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Everything you wanted to know about machine learning (but were afraid to ask)
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• Goal of the tutorial:
  – Provide unified view of supervised learning
  – Machine learning perspective!

• Intended audience: light and heavy users of these techniques

• Many references to further reading

• Please ask questions!
Course Outline

1. Theory
   - Probabilistic model and universal consistency
   - Local averaging methods
   - Empirical risk minimization

2. Algorithms
   - Losses for particular machine learning tasks
   - Regularization by Hilbert norms (kernel methods)
     - Algorithms
     - Kernel design
   - Regularization by sparsity-inducing norms
     - \( \ell_1 \)-norm regularization
     - Multiple kernel learning