

Machine Learning for Applications in Computer Vision

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Machine Learning for Applications in Computer Vision

How ML is applied to computer vision problems

- How ML is applied to computer vision problems
- Practical experience with the most common ML methods
 - Support Vector Machines
 - Tree-based classifiers
 - Neural networkds, especially deep learning
 - Gaussian process classifiers
 - Boosting methods

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- Presentation skills

Course Structure

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Three-week lectures

- Two topics will be discussed each week
 - SVMs and Tree-based classifiers
 - Deep learning and CNN
 - GP classifiers and boosting methods
- One exercise will be assigned each week, including practical/theoretical questions. Solutions will be discussed in the following week

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- One-month practical project
 - 2-3 people per group, supervised by one tutor
 - access to lab computers and discussions with superviors during class hours

 Pattern recognition and machine learning, by Christopher M. Bishop



 Machine learning: a probabilistic perspective, by Kevin P. Murphy



Format of Final Presentation

- 20min presentation, 5min --10min Q&A
- Recommended structure
 - Introduction, problem definition
 - Approaches
 - Experimental results and discussions
 - Conclusions

- Successful fulfillment of all exercises
- Gained expertise in the topics/project
- Quality of the project presentation
- Attendance of classes/exercises is mandatory! In case of sickness, medical attest is required.



Enjoy the practical course!

Q&A