

Pattern Analysis (PA)

Organizational Matters

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Pattern Recognition Lab
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FAU

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TECHNISCHE FAKULTÄT





Our Team



Dr.-Ing. Christian Riess
(Lecture)



Sebastian Käppler
(Exercises)



Today

- Organizational Matters
- Short recap – basics of statistical classification
- Lecture overview
- First topic: Random Forests



Lectures offered by the Pattern Recognition Lab

- Application-dependent lectures
 - DMIP, IMIP, Speech Processing, Computer Vision, Biomedical Signal Processing
- General Pattern Recognition Lectures
 - Introduction to Pattern Recognition (Bachelor's)
 - Focus: Preprocessing, Feature Extraction
 - Pattern Recognition (Master's)
 - Focus: Classification, Optimization, Density Estimation
 - Pattern Analysis
 - Focus: expand on topics of Pattern Recognition (more on that later)
- We recommend to hear Pattern Recognition *before* Pattern Analysis



Lecture

- 3 SWS
- 5 ECTS (Lecture)
- Dates:
 - Thursday 14:15 – 16:45, H16
 - Friday 12:15 – 13:45, H16
- Will need to skip some dates due to public holidays
 - Check schedule on website
- Recordings available at www.video.fau.de
- Announcements: <http://www5.cs.fau.de/lectures/ss-16/pattern-analysis-pa/>



Lecture (cont'd)

- Theoretical derivations on the blackboard
 - Most important!
- Slides for illustration
- Lecture tries to follow literature
 - See pointers on website



General Literature

- Bishop: *Pattern Recognition and Machine Learning*, Springer Verlag, Heidelberg, 2006
 - Available at the Library
- Duda, Hart, Stork: *Pattern Classification*, Second Edition, 2004
 - Available at the Library
- Hastie, Tibshirani, Friedman: *The Elements of Statistical Learning: Data Mining, Inference, and Prediction*, Second Edition, Springer Verlag, 2009
 - Free download



Exercise

- 1 SWS
- Additional 2.5 ECTS (7.5 in total)
- Dates
 - Monday, 12:15 – 13:45, 02.134-113
 - Tuesday, 12:15 – 13:45, E1.12
 - Content is identical
- Will need to skip some dates due to public holidays
 - Check schedule on website
- No recordings
- Attendance is not compulsory



Exercise (cont'd)

- Theoretical and programming assignments
- Solutions will be presented in the exercises
- Not required to hand in your results
- But: strong focus on exercise when taking 7.5 ECTS exam
- Previous year: MATLAB exercises
- This year: switch to Python planned
 - Free software, possibility to program at home



Certifications

- 30 minutes oral exam by Christian Riess
- Registration with Prüfungsamt
- Registration with our administrative assistant (separate announcement)
- For 5.0 ECTS
 - Content of the lecture
 - Expect translational questions
- For 7.5 ECTS
 - 2/3 contents of the lecture, 1/3 contents of the exercise
 - Expect translational questions
 - Demonstration of practical skills, e.g. programming



Questions ?