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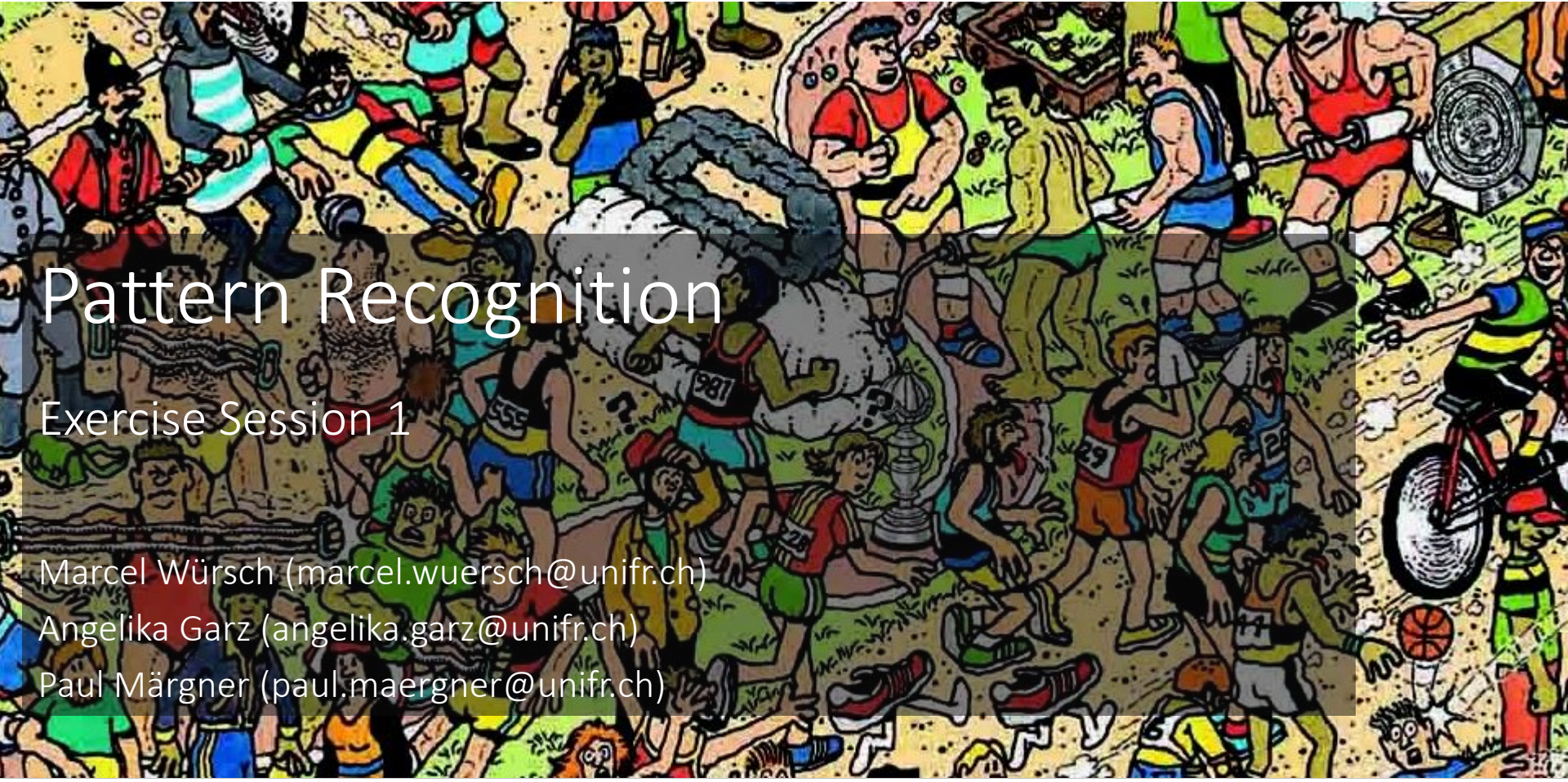

Pattern Recognition

Exercise Session 1

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Assistants

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Meetings: On Request

B408

Marcel Würsch

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Meetings: On Request

B410

Paul Märgner

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Meetings: On Request

B440

Exercises (General Remarks)

- 5 Exercises
  - Practical Work
  - 2 small individual tasks
  - 3 group projects
- Pass / no-pass
- Exam requirements
  - Each exercise *reasonably* solved
  - Presentation

Individual Exercises

- Small tasks
  - Solve individually
- Hand in through ilias

Group Projects

- Focuses on one topic
- Starts in week 5

- Small competition for final project
- Final presentation in week 14

Our Tasks

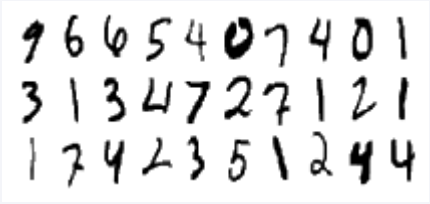
Monday after the lecture (16:00)
D 230

- Provide assistance
- Answer questions

- Outside exercise lessons
  email, pass by the office B410, B408, B440

Exercise 1 - First Classification Task

- Classify handwritten Digits
- Part of MNIST dataset[1]
- Use pixel values only
- 784 «features» (28 x 28 image)
- Data available in csv-format



1: http://yann.lecun.com/exdb/mnist/

Exercise 1 - First Classification Task

- Tasks:
  - Implement K-NN (fully, no libraries!)
  - Implement at least two distance metrics
  - Use K-NN to classify the test-set
- Expected Output
  - Source Code of your implementation
  - Accuracy of your classification
  - Accuracy: # correct identified digits / # total digits

Helpful Links

- http://kaggle.com/
  - Pattern Recognition / Machine Learning Competitions
- https://www.reddit.com/r/MachineLearning/
  - Pattern Recognition / Machine Learning news

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