Seminar WS 2016/17

Machine Learning and Artificial Neural Networks in Biomedical Applications
Milestones

- **Today**: kick-off meeting
  - General information
  - Presentation of topics
  - Choose your topics
  - First meeting with supervisor
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- December: outlines of presentation and written report

- **Week before presentations**: rehearsal presentation and first report

- January 27th, February 3th (Fridays): presentation sessions

- February 17th: final written report

Presentation sessions
27.01. 10:15 c.t. – 13
03.02. 14:15 c.t. – 17
What we expect

- Overall object: learn scientific/academic workflow

- Work independently 20 %
  - Research your topic
  - Find, read and understand relevant papers
  - Select what to present

- Regularly meet with your supervisors, they'll help you

- Written report 30 %
  - English, scientific style, 15-20 pages, Latex template
  - draft – feedback – final version

- Presentation 50 %
  - English, 20 minutes + 10 minutes discussion
  - Content, form, presentation skills
Student submission:

Nevertheless, artificial intelligence showed that, nowadays, robots and machines have problems even remotely approaching human perceptual possibilities, apart from some highly domain-specific scenarios.

Original paper:

However, artificial intelligence has shown that, apart from some highly domain-specific scenarios, to this day, machines and robots have difficulties even remotely approaching human perceptual abilities.
No Plagiarism! Don’t cheat!

Student submission:

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Original paper:

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Use your own words!
Topics

1. Machine learning and decision support in medical applications – an ongoing challenge
2. Disease prediction, detection and intelligent treatment using Machine Learning
4. Ten-dimensional anthropomorphic arm control in a human brain–machine interface
5. Eliciting naturalistic cortical responses with a sensory prosthesis via optimized microstimulation
6. Estimating workload using EEG spectral power and ERPs in the n-back task
7. Unsupervised classification of operator workload from brain signals
8. Deep Learning for Brain-Computer Interfaces
9. Convolutional Sketch Inversion
10. Optimal reduction of MCG in fetal MEG recordings
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