Discussion Session w. 41

- Topics for discussion session w. 41:
  Markov models and Hidden Markov models

Literature:

- Chapter 17 on Markov models and Hidden Markov models in (Murphy, 2012).
- Krüger, V., Herzog, D., Baby, S., Ude, A., & Kragic, D., "Learning Actions from Observations", *IEEE Robotics & Automation Magazine*, Vol. 17, No. 2, pp. 30–43, 2010.

Simulation task:

▶ Consider the example discussed in Sec. 17.4.1 in (Murphy, 2012). Simulate test data from this process, and then use the EM-algorithm for estimation of the parameters of an HMM describing the process. Also, evaluate a subset of the algorithms for inference discussed in Sec. 17.4.1 in (Murphy, 2012), based on the simulated data.
The HMM Toolbox by K. P. Murphy available at:
`https://github.com/probml/pmtk3/tree/master/toolbox/LatentVariableModels/hmm`
contains useful functions for HMM learning and inference.