



Bookmarks

▶ Machine Learning Course: Getting Started

▶ Week 1

▶ Week 2

▶ Week 3

▶ Week 4

▶ Week 5

▶ Week 6

▶ Week 7

▶ Week 8

▶ Week 9

▶ Week 10

▼ Week 11

Lecture 21 Hidden Markov Models

Lecture 22 Continuous State-space Models

Week 11 Quiz

Quiz due Apr 11, 2017 07:30 MYT

Week 11 > Week 11 Quiz > Week 11 Quiz

Week 11 Quiz

🔖 Bookmark this page

Multiple Choice

1/1 point (graded)

In a hidden Markov model, the "hidden" portion corresponds to the ____.

☐ observation sequence

☒ state transition sequence ✓

☐ timestamp sequence

☐ location sequence

Submit

You have used 1 of 1 attempt

Multiple Choice

1/1 point (graded)

When we say "discrete HMM" the word "discrete" is referring to ____.

☐ a sequence indexed by a discrete set of time points.

☒ a sequence of discrete valued observations. ✓

☐ a sequence over a discrete set of hidden states.

Submit

You have used 1 of 1 attempt

Multiple Choice

1/1 point (graded)

True or False: A continuous hidden Markov model can be thought of as a Gaussian mixture model with a Markovian transition property between clusters.

☒ TRUE ✓

☐ FALSE

Submit

You have used 1 of 1 attempt

Multiple Choice

1/1 point (graded)

The forward-backward algorithm used for state (1), while the Viterbi algorithm is used for state (2).

☒ (1) estimation, (2) sequence learning ✓

☐ (1) sequence learning, (2) estimation

Submit

You have used 1 of 1 attempt

Multiple Choice

1/1 point (graded)

In using the EM algorithm to estimate the HMM, we are integrating out _____.

☐ the initial state distribution

☐ the Markov transition matrix

☐ the emission distribution parameters

☒ the state transition sequence ✓

Submit

You have used 1 of 1 attempt

Checkboxes

1/1 point (graded)

As discussed in class, in a continuous state Markov model, which of the following are not learned?

☒ the state transition distribution

☒ the observation distribution

☐ the hidden state sequence

☒ the initial state location



Submit

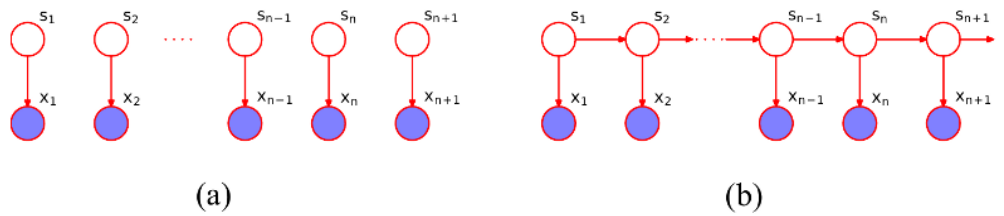
You have used 1 of 1 attempt

Text Input

4.0/4.0 points (graded)

Looking at the figure below, consider the following four models we discussed in the lectures:

1. Gaussian mixture model
2. Probabilistic PCA
3. Continuous HMMs
4. Linear Gaussian Markov models



In the continuous state case, enter the number of the model that corresponds to

(a)



2

(b)



4

What about the discrete state case?

(a)



1

(b)



3

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You have used 1 of 1 attempt

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