

<div data-bbox="36 152 892 521"> <p>Can a complex movement program be inherited?</p> <p><input checked="" type="radio"/> Only for primates</p> <p><input type="radio"/> No</p> <p><input type="radio"/> Only for humans</p> <p><input type="radio"/> Yes, in general</p> </div> <div data-bbox="36 571 892 960"> <p><b>Question 2</b> 1 pts</p> <p>Which one is the third industrial revolution?</p> <p><input checked="" type="radio"/> Production using computers and internet</p> <p><input type="radio"/> Production using deep learning</p> <p><input type="radio"/> Production using artificial intelligence</p> <p><input type="radio"/> Production using conveyor belt</p> </div>	<p>Can a complex movement program be inherited?</p> <p>Which one is the third industrial revolution?</p>
<div data-bbox="36 1003 892 1393"> <p><b>Question 3</b> 1 pts</p> <p>What is "false belief"?</p> <p><input type="radio"/> if arguments to explain a phenomenon are false</p> <p><input type="radio"/> if the belief about the "other mind" is false</p> <p><input checked="" type="radio"/> if our observations are thought to be known by the partner</p> <p><input type="radio"/> if the belief is not supported by facts</p> </div> <div data-bbox="36 1442 892 1816"> <p><b>Question 4</b> 1 pts</p> <p>Shallow multilayer feedforward networks</p> <p><input type="radio"/> can not approximate concave sets</p> <p><input type="radio"/> can not approximate non-convex sets</p> <p><input checked="" type="radio"/> are linear function approximators</p> <p><input type="radio"/> are universal approximators</p> </div>	<p>What is false belief?</p> <p>Shallow multilayer feedforward networks</p>
<div data-bbox="36 1832 892 2190"> <p><b>Question 5</b> 1 pts</p> <p>In the case of Hebbian learning the source of learning is "THIS IS YOUR ANSWER".</p> <p><input type="radio"/> the activity value of the output of the neuron</p> <p><input type="radio"/> the activity value of the input to the neuron</p> <p><input type="radio"/> input and output of the weight multiplied</p> <p><input type="radio"/> input and output of the neuron multiplied</p> </div>	<p>In the case of Hebbian learning the source of learning is</p> <p><b>Input and output of the weight multiplied</b></p>

The size of the representation of a sparse autoencoder "THIS IS YOUR ANSWER" as/than the dimension of the input.

- ☐ is either larger, smaller or the same
- ☐ the same
- ☐ smaller
- ☐ larger

The size of the representation of a sparse auto encoder

larger

#### Question 8

1 pts

What does the complexity of an optimization task depend on?

- ☐ the number of dependent variables of the task
- ☐ the wall-clock time to solve
- ☒ the number of independent variables of the task
- ☐ the number of available processors

What does the complexity of an optimization task depend on?

the synthesis of energy systems is a complex optimization task depending on multiple time series

What is the curse of dimensionality?

- ☐ the dimension of the search space decreases with the number of variables
- ☒ search space increases exponentially with the number of dimensions
- ☐ the larger the dimension of the problem, the larger the number of dependent variables
- ☐ in a bounded world, the volume of a sphere of radius 1 increases with the number of dimensions

lecture 3 - 10th slide

What is the curse of dimensionality?

#### Question 10

1 pts

What is missing from typical Deep Networks that could promote explainability?

- ☐ synchronous operation
- ☐ recognition by components
- ☐ holistic recognition
- ☐ few layer recognition

What is missing from typical Deep Networks that could promote explainability?

Answer: **Recognition by components.**

<div data-bbox="36 91 914 118"> <div>vas.elte.hu/courses/11425/quizzes/25940/take</div> <div>110%</div> <div>...</div> <div>🔍</div> <div>🌟</div> </div> <div data-bbox="70 172 474 197"> <p>What does the Chinese Room example state?</p> </div> <div data-bbox="76 255 619 425"> <ul style="list-style-type: none"> <li><input checked="" type="radio"/> Lookup tables can make sense of the representation</li> <li><input type="radio"/> Feedforward processing can make sense of the representation</li> <li><input type="radio"/> The homunculus can not make sense of the representation</li> <li><input type="radio"/> Feedforward processing can not make sense of the representation</li> </ul> </div> <div data-bbox="70 533 903 562"> <p>Question 12 <span>1 pts</span></p> </div> <div data-bbox="70 633 363 658"> <p>What is the Markov assumption?</p> </div> <div data-bbox="76 716 660 887"> <ul style="list-style-type: none"> <li><input type="radio"/> The transition-probability matrix depends on state-action-state triplets</li> <li><input type="radio"/> The strategy is a probability distribution on the state-action space</li> <li><input type="radio"/> Past actions need to be included into the strategy</li> <li><input checked="" type="radio"/> The past does not influence the current optimal decision</li> </ul> </div>	<p>What does the Chinese Room example state? (this picture has the wrong answer) Correct answer: <b>Feedforward processing can not make sense of the representation</b></p> <p>What is the Markov assumption?</p>
<div data-bbox="36 987 914 1014"> <div>vas.elte.hu/courses/11425/quizzes/25940/take</div> <div>110%</div> <div>...</div> <div>🔍</div> <div>🌟</div> </div> <div data-bbox="81 1072 517 1097"> <p>Complexity classes are "THIS IS YOUR ANSWER"</p> </div> <div data-bbox="87 1155 542 1321"> <ul style="list-style-type: none"> <li><input checked="" type="radio"/> easy to solve, hard to solve, easy to prove, hard to prove</li> <li><input type="radio"/> hard to prove, easy to prove</li> <li><input type="radio"/> hard to verify, easy to verify</li> <li><input type="radio"/> hard to solve, easy to solve, hard to verify, easy to verify</li> </ul> </div> <div data-bbox="81 1429 903 1458"> <p>Question 14 <span>1 pts</span></p> </div> <div data-bbox="81 1529 513 1554"> <p>Which feature can corrupt the Markov property?</p> </div> <div data-bbox="87 1612 451 1778"> <ul style="list-style-type: none"> <li><input type="radio"/> the strategy is a function of state and action</li> <li><input type="radio"/> an action depends on the past</li> <li><input type="radio"/> an action depends on the state</li> <li><input type="radio"/> a state depends on the past</li> </ul> </div>	<p><a href="https://duongquangduc.wordpress.com/2017/02/13/complexity-classes/">https://duongquangduc.wordpress.com/2017/02/13/complexity-classes/</a></p> <p>Complexity classes are</p> <p>Which feature can corrupt the Markov property? A state depends on the past</p>

<div><p>In the Necker cube illusion "THIS IS YOUR ANSWER"</p><div><div><div><input type="radio"/> one can not switch the illusions, but can stop one interpretation</div><div><input type="radio"/> one can switch the illusions, and can stop one interpretation</div><div><input checked="" type="radio"/> one can not switch the illusions, and can not stop one interpretation</div><div><input type="radio"/> one can switch the illusions, but can not stop one interpretation</div></div></div></div>	<p>In the Necker cube illusion</p> <p>„we cant control which one we see, and cant save one of the interpretation, cant stop changing either.”</p>
<div><div>Question 161 pt</div><p>How do you train a deep network for superresolution?</p><div><div><div><input type="radio"/> Input downscaled image, output blurred image</div><div><input type="radio"/> Input downscaled image, output real image</div><div><input checked="" type="radio"/> Input real image, output downscaled image</div><div><input type="radio"/> Input upsampled image, output downsampled image</div></div></div></div>	<p>How do you train a deep network for superresolution?</p> <p>Super-resolution is the process of recovering a high-resolution (HR) image from a low-resolution (LR) image. Super-resolution models are trained with LR images as input and HR images as target.</p>
<div><p>How can you improve the Markov property?</p><div><div><div><input checked="" type="radio"/> by learning the transition-probability matrix</div><div><input type="radio"/> by the optimization of the decisions</div><div><input type="radio"/> by including the past into decision making</div><div><input type="radio"/> by learning the reward function</div></div></div></div>	<p>how can you improve the Markov property?</p> <p>Answer: by including the past into decision making.</p>
<div><div>Question 181 pts</div><p>What is crowdsourcing?</p><div><div><div><input type="radio"/> many tasks are solved simultaneously in one optimization</div><div><input type="radio"/> many tasks are solved sequentially (after each other) in several optimizations</div><div><input type="radio"/> a company gives the task to another that gives to another and so on, forming a chain</div><div><input type="radio"/> many people work for a common goal, often innovation, problem solving, or efficiency</div></div></div></div>	<p>What is crowdsourcing?</p>
<div><div>Question 171 pt</div><p>What is the dualist resolution of the homunculus fallacy?</p><div><div><div><input type="radio"/> The homunculus estimates the output</div><div><input type="radio"/> The homunculus is immaterial</div><div><input type="radio"/> Outputs are the results of feedforward processing</div><div><input type="radio"/> Measurement theory of quantum physics resolves the fallacy</div></div></div></div>	<p>A <a href="#">dualist</a> might argue that the homunculus inside the brain is an immaterial one</p> <p>What is the dualist resolution of the homunculus fallacy?</p>

What is the explanation of the Necker cube illusion?

- ☐ there are delays in action processing
- ☐ there are delays in sensory processing
- ☐ there are delays in sensory and in action processing
- ☐ only one interpretation is available for consciousness at a time

What is the explanation of the Necker cube illusion?

Answer: **There are delays in sensory and in action processing**

What is the 'reward' in Reinforcement Learning (Goal-Oriented System)?

- ☐ a nonnegative real vector
- ☐ a real number
- ☐ a nonnegative real number
- ☐ a real vector

What is the reward in Reinforcement learning?

Answer: a real number

Why can deep networks be fooled so easily?

- ☐ they work with many layers to be optimized
- ☐ they work with many parameters to be optimized
- ☐ gradient descent can be stuck in local minima
- ☐ they work with many dimensional inputs

Why can deep networks be fooled so easily?

Answer: **They work with many dimensional inputs**

What can be the reason for the imitation of facial expression in neonates?

- ☐ It generates association between sensory and emotional signals
- ☐ It helps to understand the mood of the others
- ☐ It helps others to understand the mood
- ☐ It helps to show facial expressions

What can be the reason for the imitation of facial expression in neonates?

Answer: **It generates association between sensory and emotional signals.**

There are more than one component types. One of them is Lego-like: you can put the components together and take them apart. Another is modifiable. The representation of space and the related metric belong to "THIS IS YOUR ANSWER"

- ☐ both
- ☐ neither of them (a third one)
- ☐ the modifiable components
- ☐ Lego-like components

There are more than one component types. One of them is Lego like:

Answer: both

A Deep Neural Network is a differentiable function of "THIS IS YOUR ANSWER".

Group of answer choices

two variables (parameter, input)

three variables (hyper-parameter, parameter, input)

a single variable (input)

four variables (meta-parameter, hyper-parameter, parameter, input)



General Intelligence is the capability to "THIS IS YOUR ANSWER"

Group of answer choices

maximize reward

solve arbitrary new problems

approximate a function

solve a fixed set of problems

General Intelligence is the capability to:

Answer: solve arbitrary new problems

What is ConceptNet?

Group of answer choices

set of answers for the question "what is it used for?"

collection of concepts

collection of captions of images

collection of relations between words

What is ConceptNet:

Answer: Collection of relations between words

Which of the following is NOT part of a Reinforcement Learning (Goal-Oriented System) setting?

Group of answer choices

environment

strategy

target variable

model

Which of the following is NOT part of a Reinforcement learning(Goal-Oriented System) setting?

Answer: Model

A Deep Neural Network is a differentiable function of **two variables(parameter,input)**.

What can be the reason for the imitation of tongue protrusion? It should be an answer related to breastfeeding.

What is the relation between a fully convolutional network (i.e., there are no dense layers) and the weight values of the templates?

**Weight values of the templates correspond to some of the weights of the CNN.**

Can a complex movement program be inherited?  
**Yes, in general.**

Which one is the third industrial revolution?  
**Production using computers and Internet.**

Paper Folding

**Fold a paper of 0.1 mm thickness 50 times. How thick will that be?**

Much Larger. (Other possible answers were: 100m, Earth-Moon distance, 100km)

Communication:

**What is the learning task that is worth to communicate/talk about?**

Hard to learn and easy to verify

Neural Response:

**What can be the reason for the similar neural responses when the motion is executed by the self or by others?**

It reinforces the making sense process: the muscle related neurons 'confirm' that they could execute the same action

Tongue Protrusion:

**What can be the reason for tongue protrusion?**

It is part of the general imitation system

Homunculus Fallacy:

**What is the autoencoder-based resolution of the homunculus fallacy?**

The representation makes sense of the input by reconstructing it.

**What is the starting point of the homunculus fallacy?**

Somebody should make sense of the representation.