DLBDBDL01\_Lektion01\_Frage01

Which of the following methods does not belong to the subgroup of artificial intelligence?

* Automata theory (1 pts)
* Computational linguistics (0 pts)
* Machine learning (0 pts)
* Speech recognition (0 pts)

DLBDBDL01\_Lektion01\_Frage02

In which subgroup of machine learning does each input value of a training dataset have a ground truth output value?

* Supervised learning (1 pts)
* Unsupervised learning (0 pts)
* Reinforcement learning (0 pts)
* Unmonitored learning (0 Pts)

DLBDBDL01\_Lektion01\_Frage03

In which clustering method is a distinction made between agglomerative and divisive clustering?

* Hierarchical clustering method (1 pts)
* Partitional clustering method (0 pts)
* Density-based clustering method (0 pts)
* Model-based clustering method (0 pts)

DLBDBDL01\_Lektion01\_Frage04

What is the name of the deep learning research that reached its peak between 1980 and 1990?

* Connectionism (1 pts)
* Cybernetics (0 pts)
* Machine learning (0 pts)
* Computational linguistics (0 pts)

DLBDBDL01\_Lektion01\_Frage05

Which of the following deep learning frameworks belongs to the group of high-level frameworks?

* Keras (1 pts)
* Tensorflow (0 pts)
* PyTorch (0 pts)
* Cafe (0 pts)

DLBDBDL01\_Lektion02\_Frage01

A regression model exists for two influencing variables. What dimension does the resulting regression hyperplane assume?

* Three-dimensional (1 pts)
* Two-dimensional (0 pts)
* One-dimensional (0 pts)
* Four-dimensional (0 pts)

DLBDBDL01\_Lektion02\_Frage02

What name is given to a target variable that can assume more than two categories?

* Polychotomous (1 pts)
* Dichotomous (0 pts)
* Binary (0 pts)
* Continuous (0 pts)

DLBDBDL01\_Lektion02\_Frage03

Which regression is based on the sigmoid function?

* Logistic regression (1 pts)
* Linear regression (0 pts)
* Quadratic regression (0 pts)
* None of the above options (0 pts)

DLBDBDL01\_Lektion02\_Frage04

The value range of the logistic function is between …

* … 0 and 1. (1 pts)
* … –1 and 1. (0 pts)
* … 0 and infinity. (0 pts)
* … -1 and 0. (0 pts)

DLBDBDL01\_Lektion02\_Frage05

What criterion must the underlying data fulfil to ensure the functionality of a Rosenblatt perceptron?

* Linear separability(1 pts)
* More than two classes (0 pts)
* Linear dependence (0 pts)
* Linear regression (0 pts)

DLBDBDL01\_Lektion03\_Frage01

Which of the following activation functions is continuously differentiable?

* Sigmoid function (1 pts)
* Heaviside function (0 pts)
* Step function (0 pts)
* ReLu function (0 pts)

DLBDBDL01\_Lektion03\_Frage02

What is the advantage of the squared error over the absolute error?

* Continuous differentiability and non-constant derivative (1 pts)
* Continuous differentiability and constant derivative (0 pts)
* Non-continuous differentiability and constant derivative (0 pts)
* Non-continuous differentiability and non-constant derivative (0 pts)

DLBDBDL01\_Lektion03\_Frage03

What is the result of applying the gradient to a function?

* A gradient field (1 pts)
* A scalar field (0 pts)
* The minimum (0 pts)
* A stationary point (0 pts)

DLBDBDL01\_Lektion03\_Frage04

In which function type is the gradient method guaranteed to converge to a minimum?

* Convex (1 pts)
* Concave (0 pts)
* Convex and concave (0 pts)
* Convergence is never guaranteed (0 pts)

DLBDBDL01\_Lektion03\_Frage05

Which activation function is used most frequently with deep neural networks due to the vanishing gradient problem?

* ReLu function (1 pts)
* Heaviside function (0 pts)
* Step function (0 pts)
* Threshold function (0 pts)

DLBDBDL01\_Lektion04\_Frage01

The graph of a Tensorflow application …

* … defines the calculation structure. (1 pts)
* … runs the calculations. (0 pts)
* … starts a session. (0 pts)
* … consists of neurons and weights only. (0 pts)

DLBDBDL01\_Lektion04\_Frage02

Which of the following nodes can be assigned to the tensor-generating nodes?

* Variables (1 pts)
* Addition (0 pts)
* Multiplication (0 pts)
* Session (0 pts)

DLBDBDL01\_Lektion04\_Frage03

A vector is …

* … a one-dimensional tensor. (1 pts)
* … a two-dimensional tensor. (0 pts)
* … a three-dimensional tensor. (0 pts)
* … a zero-dimensional tensor. (0 pts)

DLBDBDL01\_Lektion04\_Frage04

A 3 x 2 matrix A is to be multiplied by a second matrix B using tf.matmul. How many rows should B have?

* As many rows as the number of columns of A. (1 pts)
* As many rows as the number of rows of A. (0 pts)
* The number of rows and columns of B should be the same. (0 pts)
* The number of rows and columns of B should match the number of rows of A. (0 pts)

DLBDBDL01\_Lektion04\_Frage05

What is the difference between Tensorflow variables and placeholders?

* Variables can be trained. (1 pts)
* They are equivalent. (0 pts)
* Placeholders can be trained. (0 pts)
* Variables are only used for the outputs. (0 pts)

DLBDBDL01\_Lektion05\_Frage01

A dataset consists of 10,000 elements. 1,000 iterations are required within an epoch for the parameter update. How big is the chosen batch size?

* 10 (1 pts)
* 100 (0 pts)
* 1,000 (0 pts)
* 10,000 (0 pts)

DLBDBDL01\_Lektion05\_Frage02

A linear classifier is trained within 5 epochs, with 5,000 iterations required in total. How big is the dataset if a batch size of 10 was chosen?

* 10,000 (1 pts)
* 1,000 (0 pts)
* 50,000 (0 pts)
* 5,000 (0 pts)

DLBDBDL01\_Lektion05\_Frage03

In which variant of the gradient method does the parameter update take place after the gradient of an element has been calculated?

* Stochastic gradient method (1 pts)
* Batch gradient method (0 pts)
* Mini-batch gradient method (0 pts)
* All of the above (0 pts)

DLBDBDL01\_Lektion05\_Frage04

A 10-fold cross-validation is used to validate a statistical model. The training dataset consists of 50,000 elements. How many validation runs are carried out?

* 10 (1 pts)
* 50 (0 pts)
* 5,000 (0 pts)
* 1,000 (0 pts)

DLBDBDL01\_Lektion05\_Frage05

The outputs of a Softmax classifier …

* … always total 1. (1 pts)
* … are always negative. (0 pts)
* … always total 0. (0 pts)
* … are always less than 1. (0 pts)

DLBDBDL01\_Lektion06\_Frage01

In the dropout method …

* … a certain number of neurons are deactivated during training. (1 pts)
* … the input data are brought to a uniform length. (0 pts)
* … higher weights are penalized to a greater extent than lower weights. (0 pts)
* … the training data undergoes manipulation during training. (0 pts)

DLBDBDL01\_Lektion06\_Frage02

Which of the following methods does not belong to the group of regularization methods?

* Data augmentation (1 pts)
* L1 regularization (0 pts)
* L2 regularization (0 pts)
* Dropout method (0 pts)

DLBDBDL01\_Lektion06\_Frage03

What information is saved when a checkpoint is stored?

* Weights (1 pts)
* Optimizer (0 pts)
* Calculation graph (0 pts)
* Cost function (0 pts)

DLBDBDL01\_Lektion06\_Frage04

Which of the following methods of the high-level Tensorflow interface Keras constitutes the first step in the training process?

* Model.compile() (1 pts)
* Model.fit() (0 pts)
* Model.test() (0 pts)
* Model.evaluate() (0 pts)

DLBDBDL01\_Lektion06\_Frage05

Which of the following activation functions has a value range of all positive real numbers?

* ReLu function (1 pts)
* Heaviside function (0 pts)
* Sigmoid function (0 pts)
* Hyperbolic tangent function (0 pts)

DLBDBDL01\_Lektion07\_Frage01

The extraction of features from data is carried out using which of the following layers?

* Convolutional layer (1 pts)
* Dense layer (0 pts)
* Max pooling layer (0 pts)
* Flattening (0 pts)

DLBDBDL01\_Lektion07\_Frage02

Matrix A=[[1,2],[2,1]] and matrix B=[[1,0],[1,0]] are to undergo mutual discrete convolution. What is the result?

* 3 (1 pts)
* 1 (0 pts)
* 2 (0 pts)
* 6 (0 pts)

DLBDBDL01\_Lektion07\_Frage03

A max pooling layer with a 2 x 2 window is applied to the feature map F=[[2,0],[1,2]]. What is the result?

* 2 (1 pts)
* 1 (0 pts)
* 3 (0 pts)
* 5 (0 pts)

DLBDBDL01\_Lektion07\_Frage04

You have data series [3,4,11,12] and [4,2,6,4,3], which are intended to represent encoded texts. What operation must be carried out in order to process them using CNN?

* Padding (1 pts)
* Data augmentation (0 pts)
* Encoding (0 pts)
* Flattening (0 pts)

DLBDBDL01\_Lektion07\_Frage05

Which of the following methods does not form part of computational linguistics?

* Text recognition (1 pts)
* Text generation (0 pts)
* Text analysis (0 pts)
* Speech recognition (0 pts)