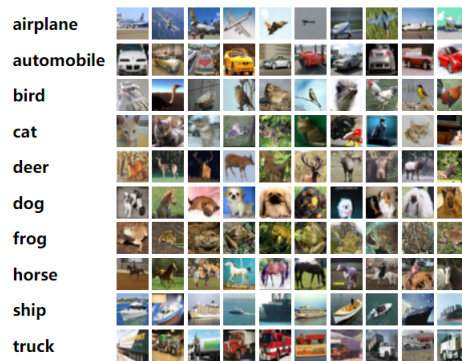


Exercise 6

Advanced Methods in Medical Image Analysis, Julia Wolleb

Deadline: 25.04.2024



Exercise 6: K-Fold Cross-Validation

Implement the whole training workflow for a classification task on the CIFAR10 dataset. Implement a deep neural network using an MLP to solve a classification task into the 10 classes. Follow the code snippet *cross-validation.py*.

- Load the CIFAR10 training and test set.
- First flatten the input images of the CIFAR10 dataset to a 1D vector: Input dimensions: $3 \times 32 \times 32 \rightarrow (3072)$, output dimensions: 10.
- As model architecture, implement an MLP with a dropout layer to prevent overfitting.
- Perform a 5-fold cross-validation on the training set.
- For all folds, monitor the validation loss curve, and hand in the plot.
- Evaluate the model for all folds on the test set, and report the 5 test scores.
- Hand in your code, which does not throw exceptions.