NPGR035 Homework 2 (Hypothesis testing)

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This document gives a brief description of the second homework and our requirements for an acceptable solution. Additional details are provided on the practicals or directly in the source code.

Description

Your task is to finish the implementation of four hypothesis tests introduced in the lecture: basic independent test, paired t-test, corrected resampled t-test and McNemar's test. The hypothesis is about difference of error between two classifiers evaluated on generated sets of data.

You are given a source file `hw2.py` with four classes representing the hypothesis tests, each containing an unfinished `compute` method. The bodies of the methods are marked with `TODO` comments. You are required to finish these methods such that the evaluation script `evaluator.py` gives the same results as written in `example_results.txt`. Hypothesis testing was discussed in the fifth lecture and test algorithms are written on slides 25-31 in presentation `MLCV_5.pdf`. Be careful about which data you use for training and which data for testing as that drives the reliability of the test.

Requirements

You are supposed to hand in only the file `hw2.py`, everything else is available on our side.

There is 100 points in total for this homework and, as usual, you have to get at least 50% (50 points) so that your homework is marked as completed. Each of the four tests is worth 25 points so you have to complete two tests perfectly or more of them with possible flaws.

Evaluation

Your solution is intended to be evaluated with the source file `evaluator.py` as in the first homework. Again, solutions which cannot be run through this script will not be accepted. The example use of the evaluation script with its arguments is given in `example_results.txt` together with the expected results.