

In this thesis, we focus on equivalence tests used in situation where we need to prove the validity of statements usually framed as null hypothesis. We present a procedure used for solving these tests called the confidence interval inclusion principle. We then discuss two selected equivalence tests for paired data. Using these tests, we demonstrate the comparison of quality of newly developed artificial intelligence-based algorithms with currently used methods. The first equivalence test is a modification of the paired t-test, and the second is a modified asymptotic McNemar test. For both tests, we present sample size calculation. Afterwards we show usage of these tests in quality testing of algorithms based on artificial intelligence which are applied in healthcare.