

**Author:** Andrzej Wójtowicz

**Title:** Ensemble classification of incomplete data – a non-imputation approach with an application in ovarian tumour diagnosis support

**Abstract:**

In this doctoral dissertation I focus on the problem of classification of incomplete data. The motivation for the research comes from medicine, where missing data phenomena are commonly encountered. The most popular method of dealing with data missingness is imputation; that is, inserting missing data on the basis of statistical relationships among features. In my research I choose a different strategy for dealing with this issue. Classifiers of a type previously developed can be transformed to a form which returns an interval of possible predictions. In the next step, with the use of aggregation operators and thresholding methods, one can make a final classification. I show how to make such transformations of classifiers and how to use aggregation strategies for interval data classification. These methods improve the quality of the process of classification of incomplete data in the problem of ovarian tumour diagnosis. Additional analysis carried out on external datasets from the University of California, Irvine (UCI) Machine Learning Repository shows that the aforementioned methods are complementary to imputation.

*Andrzej Wójtowicz*