

Abstract

Cancer is a deadly disease caused by abnormal growth of tissue cells that are not controlled in the body. In 2018, according to Globocan data, the number of cancer sufferers has increased from the previous year which was 18.1 million people, with a mortality rate of 9.6 million. In recent years, cancer prediction using DNA microarrays data can help medical experts in analyzing whether a person has cancer or not. DNA microarray data have very large and complex gene expression, therefore a dimensional reduction method is needed. Then, the dimension reduction results will be used for classification into types of cancer or not. In this study, the authors used the Principal Component Analysis method as a feature dimension reduction method and Functional Link Neural Network as a classification method, after a series of processes, the average PCA classification accuracy using the FLNN of 76.08%. The purpose of this study is to analyze the effect of PCA dimension reduction and the effect of the Polynomial Order on the classification of microarray data.

Keywords: cancer detection, Microarray, Functional Link Neural Network, Principal Component Analysis.