

## ABSTRACT

*Cancer is one disease that can cause death. Based on a survey conducted by the World Health Organisation (WHO) in 2015, cancer is the second leading cause of death in the world. About 8.8 million deaths in 2015. So it takes a DNA microarray technology as a technology to analyze and diagnose cancer. By analyzing microarray data, it can be known whether someone getting cancer or not. Data on DNA microarray has large dimensions so it can have an effect on the process of classification of cancer. Therefore, it required a scheme that include reduction of the dimensions and classification processes on it, so that the scheme of microarray's data classification is result a good accuracy. Genetic Algorith (GA) and Principal Component Analysis (PCA) used as a method of reduction Backpropagation (MBP) Conjugate Gradient Powell Beale as a method of classification. The results obtained that MBP+PCA perform span time about 2-4 seconds to training time, while MBP have about 3-14 a second. While the accuracy, the results of the classification's scheme of MBP produce an average accuracy for 92,16 %, MBP+PCA produce an average accuracy for 90,36 %, and MBP+GA produce an average of the accuracy for 70%.*

**Keywords:** *cancer, microarray, artificial neural network, conjugate gradient Powell Beale, genetic algorithm, principal component analysis.*