

## **Implementasi *Information Gain* (IG) dan *Genetic Algorithm* (GA) untuk Reduksi Dimensi pada Klasifikasi Data *Microarray* Menggunakan *Functional Link Neural Network* (FLNN)**

**Ghozy Ghulamul Afif<sup>1</sup>, Widi Astuti<sup>2</sup>, Adiwijaya<sup>3</sup>**

<sup>1,2,3</sup>Fakultas Informatika, Universitas Telkom, Bandung

<sup>1</sup>jamessaldo@students.telkomuniversity.ac.id, <sup>2</sup>astutiwidi@telkomuniversity.ac.id,

<sup>3</sup>adiwijaya@telkomuniversity.ac.id

### **Abstract**

*Cancer is one of the second deadliest diseases in the world after heart disease. Quoting from the WHO's report on cancer, in 2018 there were around 18.1 million cases of cancer in the world with a total of 9.6 million deaths. Now that bioinformatics technology is growing, microarray data is becoming popular for use in the analysis and diagnosis of cancer in the medical world. Microarray DNA data has a very large number of gene, so a dimensional reduction method is needed to reduce the number of features that used for the classification process by selecting the most influential features. In this study, hybridization was carried out by combining Information Gain as a filtering method and Genetic Algorithm as a wrapping method to reduce dimensions and FLNN as a classification method. The test results get colon cancer data to get the highest accuracy value of 90.26%, breast cancer by 85.63%, lung cancer and ovarian cancer by 100%, and prostate cancer by 94.84%.*

**Key Words:** cancer detection, microarray, information gain, genetic algorithm, hybrid

---