البحث رقم (6)

Breast Cancer Diagnosis Based on Genetic-fuzzy Logic and ANFIS Using WBCD	**عنوان البحث :**
Amany Mostafa Lotayef, Khaled H. Ibrahim، and Rania Ahmed Abul Seoud	**المؤلفون**
International Journal of Fuzzy Logic Systems, Vol. 10, no. 2, April 2020 pp.15-27. DOI: 10.5121/ijfls.2020.10202.	**تفاصل النشر**
April 2020	**تاريخ النشر**
	أشتقاق البحث
Cited in Scopus, 2020 SJR: 0.3 / **ISSN :1598-2645, 2093-744X**	**التصنيف**
	ملخص البحث

Breast cancer is conspicuously one of the most common diseases that cause death for women. Besides, it is increasing with high rates. Consequently, Breast Cancer must be discovered in early stages to avoid death or losing part of the body due to late diagnosis. Thus, there are many researches for computerizing breast cancer diagnosis with different techniques. It reduces human decision rate in order to decrease the mortality rate through the disease. Therefore, we have a major motivation for this highly significant work. The primary focus of the research is to produce a multi-model that can predict the diagnosis whether benign (noncancerous) or malignant (cancerous) nature of a tumor with high accuracy using two methods. The first method is a combining of two major methodologies, namely the fuzzy based systems and the evolutionary genetic algorithms (GFIS). The second method intends to an integrated view of implementing an adaptive neuro-fuzzy inference system (ANFIS) with feature selection using principle component analysis (PCA). Wisconsin breast cancer database (WBCD) is applied because it contained records of patients with known diagnosis. The proposed target of this research compares breast cancer diagnosis based on physical characteristics of the tumour between GFIS and ANFIS. GFIS has achieved a high performance with 97.7% however ANFIF has achieved the highest accuracy with 99.1%.