Abstract

Artificial Neural Network is a branch of Artificial intelligence, has been accepted as a new technology in computer science. Neural Networks are currently a 'hot' research area in medicine, particularly in the fields of radiology, urology, cardiology, oncology and etc. It has a huge application in many areas such as education, business; medical, engineering and manufacturing. Neural Network plays an important role in a decision support system. In this paper, an attempt has been made to make use of neural networks in the medical field (carcinogenesis (pre-clinical study)). In carcinogenesis, artificial neural networks have been successfully applied to the problems in both pre-clinical and post-clinical diagnosis. The main aim of research in medical diagnostics is to develop more cost-effective and easy-to-use systems, procedures and methods for supporting clinicians. It has been used to analyze demographic data from lung cancer patients with a view to developing diagnostic algorithms.
that might improve triage practices in the emergency department. For the lung cancer diagnosis problem, the concise rules extracted from the network achieve an high accuracy rate of on the training data set and on the test data set.

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**Key words**

Neural networks  
 fuzzy logic  

carcinogenesis  
 lung cancer  
  rule extraction  
  back propagation  
  medical decision making  
  decision support systems