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A Real Case Study of Male and Female Hormone Reading to Predict Pregnancy Percentage Using Deep Learning

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INTRODUCTION

Gynecological illness diagnosis is a big challenge for the medical community. Gynecological clinics see lots of patients for both pregnancies and other conditions such polycystic ovarian syndrome, ovarian cysts, endometritis, menopause, and others. Patients, whether they are men, women, or both, may face a range of problems related to pregnancy [1]. In order to help gynaecologists forecast the success rate of a pregnancy based on the reading of the pregnancy hormone ratio in the blood, we devised a proposed method in this study that uses artificial neural networks Several perceptrons or neurons were utilised in the ANN during this test in the lab, but the genetic method was used in the final hidden layer.

DESCRIPTION

Instead, the Bat algorithm was utilised. For optimising models that are intended to estimate or predict a value, these two techniques are suitable and adequate. As a result, the GA makes an equation-based attempt to calculate the testing cost, while the Bat algorithm makes an attempt to calculate the training cost. The GA algorithm and the Bat algorithm work together in a hybrid way in the hidden layer of the ANN to enhance its performance. As a result, the pregnancy prediction result obtained using this method may be enhanced, optimised, and increased in accuracy. Gynaecologists can forecast the likelihood that a pregnancy will succeed based on the adaptability of each algorithm. With the use of our techniques, we were able to conduct tests using information gathered from patient. Our techniques allowed us to conduct trials using data gathered from 35,207 patients and achieve a classification accuracy of The Department of Obstetrics and Gynecology at the Hospital University of Jordan provided this statistics The suggested method attempted to estimate the success rate of pregnancies regardless of whether the data were made up of patients whose pregnancy hormones were within the normal range or of patients who had sterility-promoting conditions such infections, deformities, and related disorders [2-4].

Numerous investigations on general and particular diagnostic difficulties in the field of medical diagnosis have been carried out. The correct diagnosis is typically recorded in medical records from specialised departments or institutes. Input of patient data with precise, known diagnoses is all that is necessary to launch a learning process in computer software. An artificial neural network (ANN) is a computer paradigm that is a member of the computational intelligence family that was inspired by the biological neural system. Numerous approaches and solutions for optimising problems have been provided by researchers. Due to the Bat method's vulnerability to local optima and its limited capacity for global exploration, the security of its optimization results is compromised. Our research suggests a ground-breaking Bat algorithm built to overcome these problems [5].

Our research suggests a revolutionary Bat algorithm based on an integration strategy. By picking an appropriate operator to do a global search adaptively, the integration strategy ensures that the global search capacity is preserved. To avoid becoming stuck in local optima, the local optimum by using a linear combination of Gaussian functions with different variances. A search heuristic-based algorithm known as a genetic algorithm is based on Charles Darwin's theory of natural selection. This method closely resembles natural selection, where the most physically fit individuals are chosen to reproduce in order to give rise to the following generation's children by using the genetic and Bat algorithms to improve the predictions of the prediction models; we were able to produce the most accurate outcomes in such delicate models [6,7].

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How to optimise the number of hidden layers and neurons in each hidden layer for a feed-forward neural network is one of the open issues in this area of study? As a result, based on the amount of training data and the complexity of the classification problem to be solved, many academics have proposed some basic rules for determining the appropriate number of hidden neurons for a given application. According to Kavzoglu, referenced in the optimal number of hidden layers and units relies on the quantity of input and output units, the volume of training instances, and the complexity of the classification task to be learnt.

CONCLUSION

The suggested approach trains the network using hidden layer neurons using artificial neural networks. The proposed approach, which combines the genetic algorithm (GA) and bat algorithm, was used to compute the training and testing costs of a prediction system for estimating the success rate of a pregnancy based on measurements of the pregnancy hormone ratio in the blood. On the other hand, one output layer neuron offers the success rate of conception. An iterative process was utilised to find the layers and nodes in the concealed layers. The system was also trained using a genetic algorithm, a neural network, and the Bat algorithm. In simulation runs using information from the gynaecological clinics at Jordan University Hospital, a classification accuracy of 96.5% was attained.

REFERENCES

1. Islam MM, Bairagi R. Fertility intentions and subsequent fertility behaviour in Matlab: do fertility intentions matter? J Biosoc Sci 35(4):615-619.
2. Redig AJ, Brannigan R, Stryker SJ, Woodruff TK, Jeruss JS (2011) Incorporating fertility preservation into the care of young oncology patients. Cancer 117(1):4-10.
3. Hickman LC, Fortin C, Goodman L, Liu X, Flyckt R (2018) Fertility and fertility preservation: knowledge, awareness and attitudes of female graduate students. Eur J Contracept Reprod Health Care 23(2):130-138.
4. Beerendonk CC, Braat DD (2005) Present and future options for the preservation of fertility in female adolescents with cancer. Endocr Dev 8:166-175.
5. Cawley J (2004) The impact of obesity on wages. J Hum Resour 39(2):451-474.
6. Heidari-Beni M, Kelishadi R (2020)Reciprocal impacts of obesity and coronavirus disease 2019. J Res Med Sci 25.
7. Dağ ZÖ, Dilbaz B (2015) Impact of obesity on infertility in women. J Turk Ger Gynecol Assoc 16(2):111.