A Project Report

on

CANCER PREDICTION USING GENETIC ALGORITHMS

Submitted in partial fulfillment of the requirements for the award of the degree

of

BACHELOR OF TECHNOLOGY

in

INFORMATION TECHNOLOGY

by

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BVRIT HYDERABAD COLLEGE OF ENGINEERING FOR WOMEN

(Accredited by NBA & NAAC '**A**' Grade, Approved by AICTE, and
Affiliated to JNTUH, Hyderabad)

Bachupally, Hyderabad – 500090

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DECLARATION

We hereby declare that the work presented in this project entitled **"CANCER PREDICTION USING GENETIC ALGORITHMS"** submitted towards completion of the major project in IV year of B.Tech IT at "BVRIT HYDERABAD COLLEGE OF ENGINEERING FOR WOMEN**"**, is an authentic record of our original work carried out under the esteem guidance of Ms. M. L. Prashanthi Associate Professor, IT department.

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Certificate

This is to certify that the Project report on "**CANCER PREDICTION USING GENETIC ALGORITHMS**" is a bonafide work carried by G.D.Ramya Shruthi**(16WH1A1223), N. Pujitha (16WH1A1233), M.Snigdha(16WH1A1240)** in the partial fulfillment for the award of B.Tech degree in **Information Technology, BVRIT HYDERABAD COLLEGE OF ENGINEERING FOR WOMEN, Bachupally, Hyderabad**, affiliated to Jawaharlal Nehru Technological University, Hyderabad under my guidance and supervision.

The results embodied in the project work have not been submitted to any other University or Institute for the award of any degree or diploma.

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ABSTRACT

Using genetic algorithms, we attempt to find an optimal and intelligent solutions. Here, we have taken cancer prediction as an example and to improve its accuracy we have used genetic algorithms instead of backpropagation. We apply different algorithms like Neural Networks. Genetic algorithm is very much useful in finding the optimal initializing weights which helps in getting more accuracy.

There are four phases in executing a genetic algorithm. They are initialize population, selection, crossover and mutation. The first phase is gathering the population for optimization. In the selection phase, the best solutions are determined using some form of objective function also known as a 'fitness function' in genetic algorithms, before being passed to the crossover phase. Different methods for choosing the best solutions exist, for example, fitness proportionate selection and tournament selection; different methods may choose different solutions as being 'best'. Crossover is the process of taking more than one parent solutions and producing a child solution from them. By recombining portions of good solutions, the genetic algorithm is more likely to create a better solution. The mutation phase encourages genetic diversity amongst solutions and attempts to prevent the genetic algorithm converging to a local minimum by stopping the solutions becoming too close to one another. In mutating the current pool of solutions, a given solution may change entirely from the previous solution.

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