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Patent Search

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Abstract:

'Osteoporosis' is characterized by a complete decrease in the amount of bone mineral to a level below that required for mechanical support of regular activity. Physic medical protocols in order to diagnose diseases. Medical diagnosis is the accurate decision of upon the nature of a patient's disease, the prediction of its likely evoluto chances of recovery, based on a set of clinical and laboratorial data. When dealing with clinical data provided by a medical protocol that takes account of a large num features, one has to consider methods for feature selection. The aim of this invention is to design the predictive model for early and accurate detection of osteoporosis of the situations patient's age, weight, and gender are taken as the clinical features. In this invention by taking into considerations these three features an osteoporosis prediction model is invented to assess the risk of osteoporosis. In this invention a neural network based model is developed for patient risk assessment having devel osteoporosis. The invented model uses the modified Multi Layer Perceptron Neural Network in which the number of input neurons, output neurons, hidden layers, n neurons in hidden layers, and training parameters can be dynamically specified. The proposed model is tested with 10 inputs age, gender (0 for male and 1 for femal height, menopause, alcohol units, number of cigarettes per day and number of fractures. It assesses the risk of patient having developed osteoporosis by classifying into at risk or not at risk category.

Complete Specification

Claims:We Claim,

1. Osteoporosis Prediction Models for Patient's Risk Assessment.
2. The designed predictive model used for early and accurate detection of osteoporosis if patient age is less than or equal to 60.
 - a. Methodology or algorithm used for designing this model.
3. The designed predictive model used for early and accurate detection of osteoporosis if patient age is greater than 60.
 - a. Methodology or algorithm used for designing this model.
4. Modified multi layer perceptron neural network model used for osteoporosis risk prediction and assessment.
 - a. Model which uses patient's health parameters as inputs for osteoporosis prediction for patient's risk assessment

, Description:The models invented for osteoporosis patient's risk prediction uses assessment mechanism. The proposed models take patient's age, weight and gen input parameters for the risk prediction. For identifying patients who are at risk for having developed osteoporosis the invented model shown in figure 1 uses follo algorithm. The cut point used in algorithms is acting as a threshold for risk prediction.

Algorithm: Osteoporosis Risk Prediction and Assessment

Inputs: Age, Weight, and Gender

1. Cut Point = 3
2. Take patient's weight in kilograms, age in years and gender

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