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An ANN-Based Predictive Model for Diagnosis and Forecasting of Hypertension

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Abstract : The effects of hypertension are often lethal thus its early detection and prevention is very important for everybody. In this paper, a neural network (NN) model was developed and trained based on a dataset of hypertension causative parameters in order to forecast the likelihood of occurrence of hypertension in patients. Our research goal was to analyze the potential of the presented NN to predict, for a period of time, the risk of hypertension or the risk of developing this disease for patients that are or not currently hypertensive. The results of the analysis for a given patient can support doctors in taking pro-active measures for averting the occurrence of hypertension such as recommendations regarding the patient behavior in order to lower his hypertension risk. Moreover, the paper envisages a set of three example scenarios in order to determine the age when the patient becomes hypertensive, i.e. determine the threshold for hypertensive age, to analyze what happens if the threshold hypertensive age is set to a certain age and the weight of the patient if being varied, and, to set the ideal weight for the patient and analyze what happens with the threshold of hypertensive age.

Keywords : neural network, hypertension, data set, training set, supervised learning
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