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Simply Classified Method in Modified Neural Networks System for Diabetics Type 2 Disease

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Abstract: today One of the major problems in today's world is diabetic, Diabetic is the leading cause of death of many people. Due to diabetic disease, many people's lives are mentally disturbed and physically weakened, with certain restrictions. Because of this disease, people are living in such a state that they think why they are living this life. Due to this disease, most of the human life is dependent on money and restless life to survive. In today's world computer usage is high and its growth is phenomenal. In this too, the Internet of Things centering on the inventions that will improve human life are grow up day by day. We have tried to solve diabetes in our world with these advanced developments. With the development of Internet of Things, this disease can be solved easy detection methods.

Introduction: According to World Health Organization, the human toll of diabetes is increasing day by day. The number of people infected with this disease is growing exponentially, and the percentage of people infected with the disease is increasing. This diabetic disease turns human life into hell. The effects of this disease persist till death or cause death. In today's world, computer science technology is evolving rapidly. All the departments are making good use of this development and trying to get the real results accurately. We also use this development to cure existing diabetic disease through computer development. This system we provide aims to easily detect the sugar level and provide the required decision to the patient.

Research Methodology: when our pancreas not secrete the required unit of insulin, the problem that arises when the limit of sugar in our blood is called diabetes. Diabetic disease is divided into two types, the first type is called type 1 diabetes and the second type is called type 2 diabetes. About 422 million people suffering from diabetes worldwide, the maximum living in low-and middle-income countries, and every year 1.5 million deaths are to diabetes. The number of diabetic patients has doubled over the last few years [1].

World Diabetes Day provides a chance to raise awareness of diabetes as a public health issue and what needs to be done, gives solution for best preventions [2]. This World Diabetes Day, WHO will announce the need for access to important care, including awareness of ways people with diabetes can minimize their risk of complications [3]. Activities will also revel the experiences of people with all the diabetes to help those impacted to take action, including for essential care.

Diabetic type 1 diabetes occurs when our body does not secrete insulin properly. 5 to 10 percent of people are affected by it. Children and young adults are affected by this type. Type 2 diabetes affects people of above 40 ages [4]. The disease that occurs when our body secretes less insulin is called type 2 diabetes. This disease affects middle-aged and elderly people. About 95% of the population is affected by this type of type 2 diabetic syndrome

[5]. About 95% of the diabetic patients is affected by this type of type 2 diabetic syndrome [6]. To prevent this type of disease, it is important to eat a healthy diet and sleep well at the right time.

A neural network is consists of artificial neurons, also known as nodes. These nodes take the information to the next level. Information exchange In the next stages and calculation we use various methods to get the results we need. Using Modify neural Network Project we give simple but accurate results

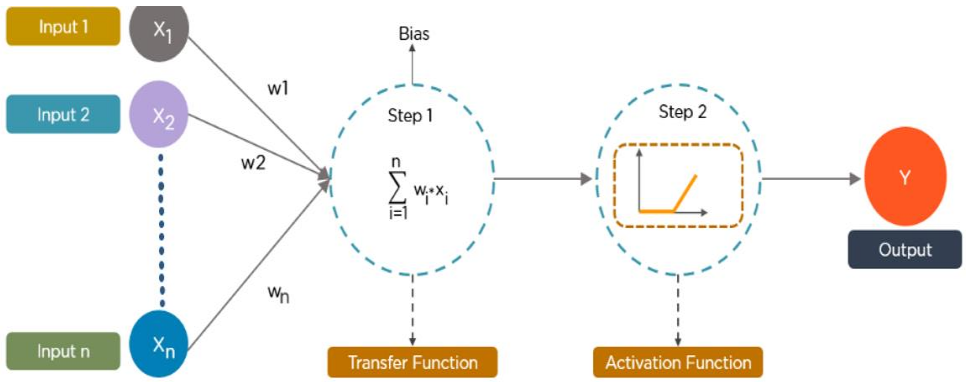


Figure 1 Neural Networks

Proposed methodology: The prevalence of diabetes in the developing world is increasing. In this too, the number of Type 2 diabetic patients is increasing very much. It is important to find a solution to this diabetic syndrome or to easily detect and solve the symptoms of the disease.

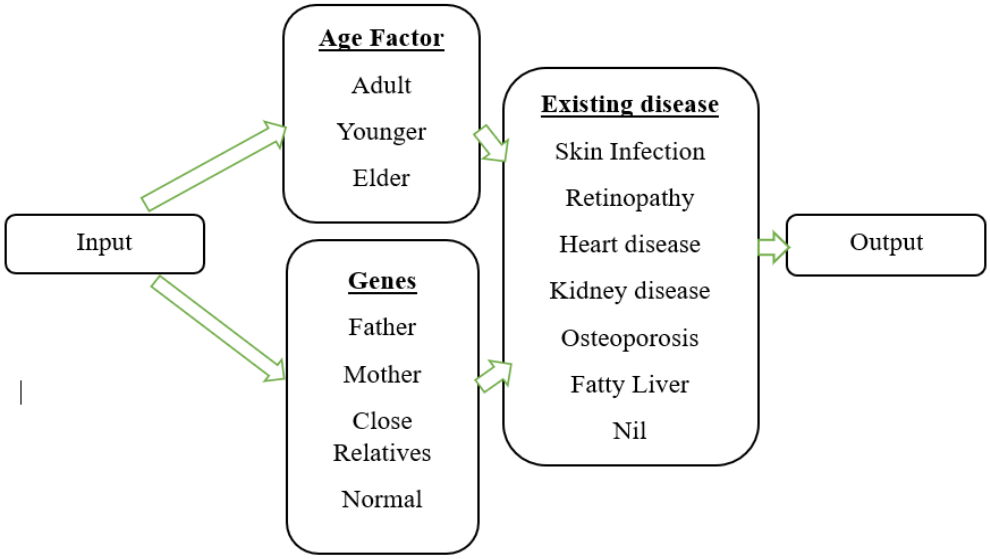


Figure 2 Modified Neural Network

Stage 1: Type 2 diabetes is more likely to affect the elderly than the young. This disease easily affects people above the minimum age of 40. Because of this age is a factor in diabetics. Because of this age is a factor in the diabetic patient, so the first thing we need to look at is the age of the patient.

$$Age = \sum AD \text{ or } \sum YO \text{ or } \sum EL \qquad \text{Eq} \rightarrow 1$$

AD ⟶ Adults

YO ⟶ Younger

EL ⟶ Elder

Stage 2: Diagnosing complications through the legacy of a second stage diabetic becomes important. Often this diabetic disease can be traced through heredity. When the disease is present in one's mother or father or close relatives it affects the offspring. Also of importance is the detection of hereditary type in the diabetic patient

$$\text{Genes} = \sum \text{FA or } \sum \text{MO or } \sum \text{CR or } \sum \text{NI} \qquad \text{Eq} \rightarrow 2$$

FA ⟶ Father

MO ⟶ Mother

CR ⟶ Close Relatives

NO ⟶ Normal

Stage 3: Step 3 We should also take note of other diseases that the diabetic patient has. Diabetic patients should be treated with consideration for other diseases. Other diseases present in the diabetic patient cause more complications. Other diseases cause more complications diabetic patients.

$$\text{Genes} = \sum \text{SK or } \sum \text{DI or } \sum \text{HE or } \sum \text{KI or } \sum \text{OS or } \sum \text{LI or } \sum \text{NI} \qquad \text{Eq} \rightarrow 3$$

SK ⟶ Skin Infections

DI ⟶ Diabetic Retinopathy

HE ⟶ Heart Damage

KI ⟶ Kidney Damage

OS ⟶ Osteoporosis

LI ⟶ Fatty Liver

Ni ⟶ Nil

Finally, treat diabetic type 2 disease based on his genetics and the diseases. When treating skin diseases with diabetic type 2 disease based on age and genetics, treatment should be done based on the area affected. People with diabetes have a higher risk of ulcers on the feet, hands and tongues.

Figure 3 Skin Infections

There is a high percentage of blindness due to this diabetic type 2 disease. There are three types of visual impairment in these diabetic patients: mild, severe and high risk

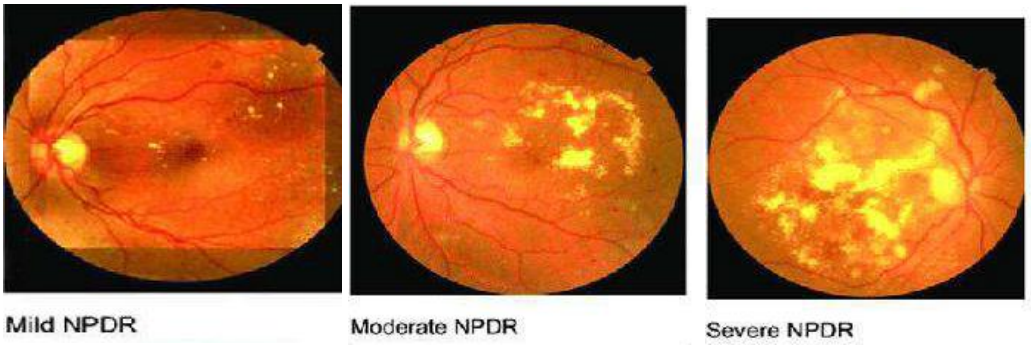


Figure 4 Diabetic Retinopathy

There is a high prevalence of heart disease damage due to the presence of diabetic type 2 disease. A diabetic type 2 is the leading cause of death in people with heart attack disease. The following photo for heart failure treatment options for patients with type 2 diabetes

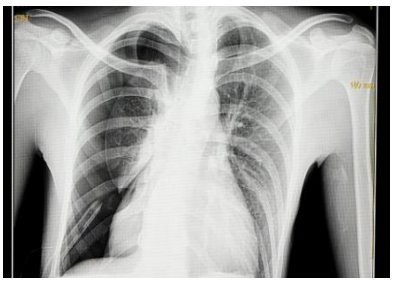
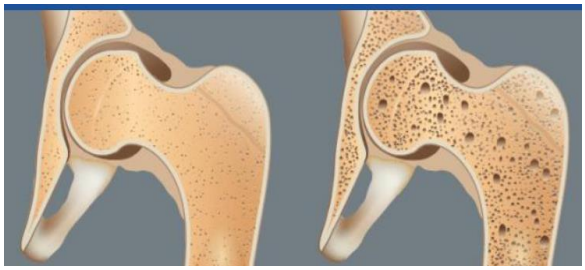


Figure 5 Heart damage

Diabetic Type 2 disease is a factor in people with diabetic kidney damage. This diabetic disease takes a heavy toll on kidney damage and related diseases.

Figure 6 Kidney damage

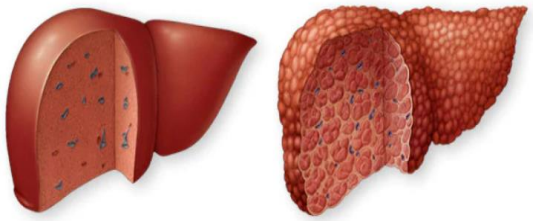
Diabetic disease is more and more aggravating of this Osteoporosis disease. Osteoporosis disease makes our bones weak. Diabetic type 2 disease further weakens the bone structure.



Normal bone Osteoporosis

Figure 7 Liver damage

Liver problem that affects people who drink to alcohol. Type 2 diabetes diseases and fatty liver problems can increase your risk



Normal Liver Lever Damage

Figure 8 Liver damage

Finally, we can use these three categories to find out the nature of diabatic type 2 patient disease. By monitoring the patient's condition at every stage, this proposed technology through Diabetic type 2 patient's condition is monitored and treatment is provided to the patient

For 1 to 3 (AD, YO, EL) Eq → 4

For 1 to 4 (FA, MO, CR, NO) Eq → 5

For 1 to 7 (SK, DI, HE, KI, OS, LI, NI) Eq 6 →

Finally, we got result in

OU = AD+FA+MI Eq → 7

---------- Eq → 8

---------- ----------

OU= EL +CR+NI Eq → 83

OU= EL +NI+NO Eq → 84

Result & Discussion: The results obtained by these methods are not only easy to diagnose the disease but also accurate. Using these methods can provide treatment based on data from excessive results. Our implementation provides more accurate results than the old algorithm

TECHNIQUES	ACCURACY (%)	ERROR (%)
FNN	0.81	9
MACO-CNN	0.92	8
MDLA	0.95	5
MNN	0.97	3

Table -1 Diabetic Disease result Status Comparison

This algorithm provides better result than the FNN (Feedforward Neural Networks algorithms), MACO-CNN (Modified Deep Learning Algorithm), MDLA (Modified Deep Learning Algorithm). This algorithm defines 85 types of results, These can provide immediate treatment to the patient as per our got results

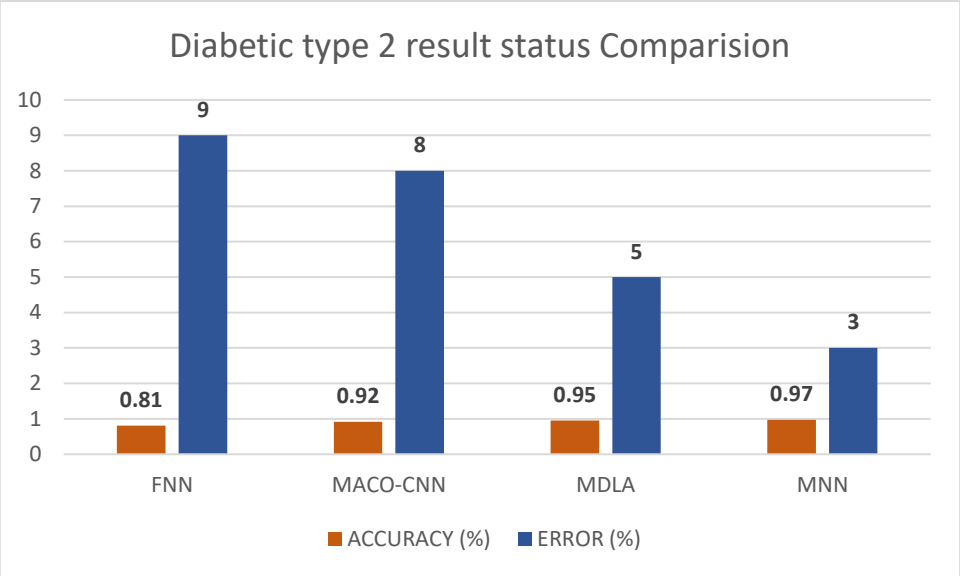


Figure 9 Comparisons of Diabetic type Disease

Conclusion: Diabetic Type 2 disease is a major cause of human morbidity and mortality**.** This disease causes massive financial problems and troubles us throughout life. In our method, treatment can be selected based on the age of the patient and the co-morbidities other than genetics. By these methods 85 types of results can be divided into the grade of the disease. Through the results of this step the nature of the disease can be determined and the patient can be given the necessary treatment. Knowing the condition of the patient can easily give solution the need for treatment. We can use this modified network algorithm to get accurate results and use simple way.

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