



PREDICTION OF DIABETES USING NEURAL NETWORKS

A PROJECT REPORT

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BONAFIDE CERTIFICATE

Certified that this project report “**PREDICTION OF DIABETES USING NEURAL NETWORKS**” is the bonafide work of “**DEEBAN N (16BCS3009), JEYAPUNITHA N (16BCS3029), MUTHUKUMARAN B (16BCS3061), RAVIKUMAR R (16BCS3079)**” who carried out the project work during the academic year 2020 under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

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INTERNAL EXAMINER

EXTERNAL EXAMINER

DECLARATION

We affirm that the Project report titled “**PREDICTION OF DIABETES USING NEURAL NETWORKS**” being submitted in partial fulfillment for the award of **Bachelor of Engineering** in **Computer Science and Engineering**, is the original work carried out by us. It has not formed the part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

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ABSTRACT

The disease will produce the increased level of glucose which causes inadequate production of insulin in the body. This disease is called diabetes disorder. This disease is not a fatal disease but sometimes it will cause the serious problem of body parts removal especially legs in the body. This will be similar to fatal cause in the body. The removal of body parts will be done only in the extreme level of diabetes. Its incidence rates are increasing alarmingly every year. These serious issues can be prevented if the prior symptoms of the disease are identified. The dataset of the patient will be collected in the hospital. The dataset will have the entire information about the patient. The information about the patient in the report will have the hemoglobin content, plasma glucose, blood pressure, skin thickness and all other details of the patient. The existing system does not provide the prior intimation to the patients as well as to the doctors regarding the future prediction and serious level of diabetes. The idea we have used here is feature selection methods. The feature selection algorithm which we have selected is deep neural networks, coded on Python, which will gather the particular details regarding the patient and also provide more accuracy in the process of predicting the diabetes in the initial stage itself. At the end, we can provide voice based results for disease diagnosis based on the collected data and also intimate the patients by sending SMS, about the seriousness and the tablets need to take for their issues, to the patients.

ABSTRACT WITH PO AND PSO MAPPING

ABSTRACT	PO MAPPING	PSO MAPPING
<p>The disease will produce the high level of glucose in the blood which leads to inadequate production of insulin in the body. This disease is called diabetes mellitus. This disease is not a fatal disease but sometimes it will cause the serious problem of body parts removal especially legs in the body. This will be similar to fatal cause in the body. The removal of body parts will be done only in the extreme level of diabetes. These serious issues can be prevented if the prior symptoms of the disease are identified. The dataset of the patient will be collected in the hospital. The dataset will have the entire information about the patient. The information about the patient in the report will have the hemoglobin content, plasma glucose, blood pressure, skin thickness and all other details of the patient. The existing system does not provide the prior intimation to the patients as well as to the doctors regarding the future prediction and serious level of diabetes. The major idea of this project is to use the feature selection methods. The feature selection algorithm which we have selected is neural networks, which will gather the particular details regarding the patient and also provide more accuracy in the process of predicting the diabetes in the initial stage itself. At the end, we can provide voice based results for disease diagnosis based on the collected data and also intimate the patients by sending SMS, about the seriousness and the tablets need to take for their issues, to the patients.</p>	<p>PO1(3), PO2(3), PO3(3), PO4(3), PO5(3), PO6(3), PO8(3), PO9(3), PO10(3), PO11(3), PO12(3)</p>	<p>PSO1(3), PSO2(3)</p>

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LIST OF ABBREVIATIONS

- ML – Machine Learning
- AI – Artificial Intelligence
- DL – Deep Learning
- NN – Neural Network
- DNN – Deep Neural Network
- CNN – Convolutional Neural Network
- ANN – Artificial Neural Network
- HIP – Hyperglycemia In Pregnancy
- IDF – International Diabetes Federation
- KDD – Knowledge Discovery in Database
- SVM – Support Vector Machine
- KNN – K Nearest Neighbor Classifier
- LR – Logistic Regression
- NPV – Negative Predicted Value
- FP rate – False Positive Rate
- RMC – Rate of Misclassification