

Insulin Level Prediction Using Machine Learning Approach

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DECLARATION

This thesis has been submitted to the department of Computer Science and Engineering, East West University in the partial fulfillment of the requirement for the degree of Bachelor of Science in Computer Science and Engineering by us under the supervision of Dr. Shamim H Ripon, Associate Professor, Department of CSE at East West University under the course 'CSE 497'. We also declare that this thesis has not been submitted elsewhere for the requirement of any degree or any other purposes. This thesis complies with the regulations of this University and meets the accepted standards with respect to originality and quality. We hereby release this thesis to the public. We also authorize the University or other individuals to make copies of this thesis as needed for scholarly research.

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LETTER OF ACCEPTANCE

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ABSTRACT

Diabetes patients have to continuously monitor their blood glucose levels and adjust insulin doses, striving to keep blood glucose levels as close to normal as possible. They need to take insulin dose before their every meal. The doctors have to decide insulin doses for every patient according to the patient's previous records of doses and sugar levels measured at regular intervals. Our paper proposes a Machine Learning Approach & uses a RNN (LSTM) and ANN algorithm to predict the insulin chart for a patient efficiently to implement the model. The thirty six months chart maintained by the patient has been used to train the model and the long sequence of next insulin prediction is done on the basis of trained data. In this research, out of various existing algorithms of finding insulin level frequent item sets and mining association rule, we use predictive Apriori algorithm for this prediction.

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ABBREVIATIONS

1. RNN – Recurrent Neural Network
2. LSTM – Long Short Term Memory
3. PAA – Predictive Apriori Algorithm
4. ANN – Artificial Neural Network
5. AI – Artificial Intelligence

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