



*Scienxt Journal of Artificial Intelligence and Machine Learning*  
*Year-2023// Volume-1// Issue-3// Sept-Dec// pp. 1-10*

## *A novel method for predicting diabetes in medical contexts through machine learning and a web application*

**Varun. G<sup>\*1</sup>**

Jyothy Institute of Technology Bangalore, Karnataka, India

**Varun Kashyap<sup>2</sup>**

Jyothy Institute of Technology Bangalore, Karnataka, India

*\*Corresponding Author: Varun G.  
Email: [vg71276@gmail.com](mailto:vg71276@gmail.com)*

<https://doi.org/10.5281/zenodo.10153325>

## **Abstract:**

Data classification and prediction are crucial elements within the field of data mining, playing a pivotal role in computer science and data processing. Diabetes mellitus, a pervasive global health concern, is often described as a "slow poison" by medical experts due to its insidious nature and long-term health implications. This paper delves into the world of data-driven solutions to address the challenge of distinguishing between diabetic and non-diabetic patients, offering an innovative approach. In this research, the authors harnessed the power of a modified extreme learning machine, a versatile machine learning algorithm renowned for its rapid learning capabilities. This adapted extreme learning machine was employed to scrutinize pre-existing data, with the goal of effectively discerning between individuals afflicted by diabetes and those who are not. In addition to the extreme learning machine, the study implemented a support vector machine (SVM) model in the predictive process. SVM, a robust algorithm, excels in determining the optimal hyperplane within the feature space. This hyperplane serves as a boundary effectively separating two distinct classes: diabetic individuals and non-diabetic individuals. By utilizing SVM, the research aimed to construct an accurate and dependable model for predicting diabetes based on the available data. Moreover, the user interface for this research was thoughtfully crafted using Streamlit, a versatile framework for developing web applications. Streamlit played a pivotal role in bridging the gap between the user-facing and technical aspects of the predictive model. It offered a user-friendly interface, making interaction with the SVM-based prediction system intuitive. The use of Streamlit ensured that the outcomes of the SVM model could be easily accessed and applied by medical professionals and other stakeholders. By leveraging a modified extreme learning machine and a support vector machine, this research endeavors to provide an effective tool for distinguishing between diabetic and non-diabetic individuals.

## **Keywords:**

Machine Learning, Streamlit, REST, Support Vector Machine (SVM)