## **Brain Stroke Prediction Using Machine Learning Algorithms**

**ABSTRACT:**

A stroke, also known as a cerebrovascular accident or CVA is when part of the brain loses its blood supply and the part of the body that the blood-deprived brain cells control stops working. This loss of blood supply can be ischemic because of lack of blood flow, or haemorrhagic because of bleeding into brain tissue. A stroke is a medical emergency because strokes can lead to death or permanent disability. There are opportunities to treat ischemic strokes but that treatment needs to be started in the first few hours after the signs of a stroke begin. The patient, family, or bystanders should activate emergency medical services immediately should a stroke be suspected. A transient ischemic attack (TIA or mini-stroke) describes an ischemic stroke that is short-lived where the symptoms resolve spontaneously. This situation also requires emergency assessment to try to minimize the risk of a future stroke. By definition, a stroke would be classified as a TIA if all symptoms resolved within 24 hours. According to the World Health Organization (WHO) stroke is the 2nd leading cause of death globally, responsible to approximately 11% of total deaths . For survival prediction, our ML model uses dataset to predict whether a patient is likely to get stroke based on the input parameters like gender, age, various diseases, and smoking status. Unlike most of the datasets, our dataset focuses on attributes that would have a major risk factors of a Brain Stroke

**EXISTING SYSTEM:**

Very few systems use the available clinical data for prediction purposes and even if they do ,they are restricted by the large number of association rules that apply.Diagnosis of the condition soley depends upon the Doctor's intuition and patient's records.The decision support system and will prove to be an aid for the physicians with the diagnosis.The algorithm,Fuzzy c means uses clustering and makes use of clusters and data points to predict the relativity of an attribute .Each data point is associated with multiple clusters depending upon the membership degrees

**DISADAVANTAGES:**

❖ Detection is not possible at an earlier stage

❖ Parctical use of various collected data is time consuming

**PROPOSED SYSTEM:**

The proposed system acts as a prediction support machine and will prove as an aid for the user with diagnosis. The algorithms used to predict the output have potential in obtaining a much better accuracy then the existing system. In proposed system, the practical use of various collected data has turned out to be less time consuming. .we calculate accuracy of machine learning algorithms for predicting heart disease, for this algorithms are k-nearest neighbor, decision tree, linear regression and support vector machine(SVM) by using UCI repository dataset for training and testing

**ADAVANTAGES:**

* High performance and accurancy rate
* Machine Learning Algorithms is very flexible and is widely in various domains with high rates of success
* Data and information collected for prediction is easily available to the users. System provides users with precaution that can be taken to reduce risk factor.

**SYSTEM REQUIREMENTS:**

**HARDWARE REQUIREMENTS:**

❖ System : Pentium Dual Core.

❖ Hard Disk : 500 GB.

❖ Monitor : 15’’ LED

❖ Input Devices : Keyboard, Mouse

❖ Ram : 32GB.

**SOFTWARE REQUIREMENTS:**

Operating system : Windows 7.

Coding Language : Python

Tool : PyCharm,VisualStudio Code

Database : MYSQL