IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 2, March 2026
Impact Factor: 8.2

Design and Implementation of a Brain Stroke Prediction and Patient–Doctor Communication System Using Machine Learning

Prof. Leena Raut[1], Harsh Bhidekar[2], Shriniwas Dubbewar[3]
[1,2]PG Scholar, Department of Computer Application
[3]Assistant Professor, Department of Computer Application
K. D. K. College of Engineering, Nagpur, Maharashtra, India
leena.raut@kdkce.edu.in, harshbhidekar.mca24f@kdkce.edu.in, Shriniwassdubbewarmca24f@kdkce.edu.in

Abstract: *Stroke is one of the leading causes of death and long-term disability worldwide. Early prediction and risk assessment can significantly reduce mortality rates and improve preventive healthcare planning. However, many individuals remain unaware of their stroke risk due to the lack of accessible and intelligent prediction systems. To address this issue, this project proposes a Brain Stroke Prediction System that utilizes machine learning techniques to predict the likelihood of stroke occurrence based on patient health parameters.*

The system analyzes multiple medical attributes such as age, hypertension, heart disease status, average glucose level, body mass index (BMI), smoking status, and other relevant clinical factors. Using a trained machine learning model, the system processes user-provided health data and predicts whether the person is at high or low risk of experiencing a stroke.

The application is implemented as a secure web-based system integrated with a backend database for data storage and management. The system includes user authentication, session handling, and structured API responses to ensure secure and reliable communication. The prediction model is trained using historical healthcare datasets and evaluated for accuracy, precision, and reliability.

Experimental results demonstrate that the proposed system can effectively analyze risk factors and provide early warnings for potential stroke cases. By offering an easy-to-use interface and real-time prediction capability, the system supports preventive healthcare measures and assists medical professionals in preliminary risk assessment.

The Brain Stroke Prediction System contributes to intelligent healthcare solutions by combining data analytics, machine learning, and secure web technologies into a scalable and user-friendly platform..

Keywords: Brain Stroke Prediction, Machine Learning, Healthcare Analytics, Risk Assessment, Medical Data Analysis, Predictive Modeling, Intelligent Healthcare System, Web-Based Health Application

DOI: 10.48175/IJARSCT-31553