

***The Classification of ischemic stroke used The K-Nearest Neighbor (KNN) method at Bhayangkara Bondowoso Hospital in 2023. Pembimbing (Angga Rahagiyanto, S.ST. M.T)***

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**ABSTRACT**

Ischemic stroke is a kind of disease that occurs due to narrowing of the blood vessels makes the blood flow to the brain is obstructed. Ischemic stroke is a high prevalence disease. Bhayangkara Bondowoso Hospital is a fluctuated ischemic stroke cases hospital from 2019-2023. This study aims to classify ischemic stroke based on risk factors (age, gender, diabetes mellitus, ADD, obesity, hypertension and smoking), symptoms (extremity weakness, decreased consciousness, dizziness, nausea, vomiting, seizures, cough, shortness of breath, fever, pain, tingling and aphasia) and a head CT scan. This type of research is quantitative which use the primary data. The research sample consisted of 193 cases and 192 controls by simple random sampling. The classification uses the KNN algorithm with supplied test. The results of the study showed that the variables that were risk factors for ischemic stroke were age (65.8%), gender (58.03%) and hypertension (63.73%). Meanwhile, the symptoms frequently experienced by ischemic stroke patients are weakness of the extremities (54.92%), dizziness (53.89%) and weakness (52.33%). Moreover the head CT scan is 98.96%. This classification uses the K-Nearest Neighbor method with  $k=18$  and supplied test. The accuracy results produce performance with an accuracy level of 92.2078%, Precision 86,05%, Recall 100%, F1 Score 0.250 and ROC Area value is 0.9962. The ROC value of this area is included in the Excellent Classification category (very good classification). The suggestions in this research design a system.

***Keyword: Ischemic Stroke, KNN, K-Fold Cross Validation***