

## ABSTRACT

### CLASSIFICATION OF HEMORRHAGIC STROKE ON COMPUTERIZED TOMOGRAPHY SCAN IMAGES OF THE BRAIN USING CONVOLUTIONAL NEURAL NETWORK (CNN) ALGORITHMS

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*Stroke is the number 2 deadly disease and the third cause of disability in the world with symptoms that appear suddenly and very quickly in a matter of hours or even seconds. There are 23,809 potential and 2,243 possible misdiagnosed strokes, 101 million stroke cases that have occurred, 12.2 million new stroke cases each year with an increase rate of about 1 case per 3 seconds, and 6,552,724 cases of death and disability caused by stroke each year. the year. In 2018 the prevalence of stroke in Indonesia aged 15 years and over based on a doctor's diagnosis was 10.9% or around 2,120,362 people, and the death rate that occurred due to stroke in Indonesia in 2019 was 196.74 out of 100,000 individuals. One type of stroke that often occurs is hemorrhagic stroke, with a percentage of 13% of all stroke cases with the number of deaths and disabilities caused by around 2,690,171 cases. So we need a hemorrhagic stroke classification system that is fast and accurate to minimize errors and delays in treatment which can result in the patient's condition worsening. This study designed a hemorrhagic stroke classification system through brain CT scan images using the Convolutional Neural Network (CNN) algorithm. There are 6 types of dataset used with a total amount of data of 13,568 CT Scan slice images in PNG format. The designed system successfully classifies CT Scan images into normal or hemorrhagic classes properly. The average accuracy value of the designed system testing phase reaches 87.67%.*

***Kata kunci : Stroke, Hemorrhagic Stroke, Stroke Detection, Convolutional Neural Networks, CNN, Image Classification***