

STROML: A standard machine learning dataset for diagnosis of stroke patients' lesion location based on the Barthel index and Lawton IADL scale

Malahat Akbarfahimi¹, Amin Ghaffari¹, Alireza Almasi Nokiani¹, Moslem Dehghanizadeh², and Seyyed Mohammad Mehdi Fatemi Bushehri¹

¹Affiliation not available

²Shahid Sadoughi University of Medical Sciences and Health Services

January 30, 2024

Abstract

Stroke is the second cause of mortality and has third place in the group of disabling diseases. Diagnosis of lesion location of patients with stroke is one of the main factors to determine treatment approaches for these cases. The usual methods in this diagnosis are time-consuming and costly. Today, expert systems, a machine learning method, have been able to reduce costs in diagnosing the disease. One of the most important components of an expert system is the dataset. Because there is no dataset for stroke patients, in this research, STROML, the first standard machine learning dataset for diagnosis of stroke patients' lesion location based on the Barthel index and Lawton IADL scale is released. To show the efficiency of STROML, a hybrid expert model for diagnosis lesion location of patients with stroke is proposed. The proposed model contains two main parts: the neural-network-based classifier and the rule-based classifier. In this model, a PNN classifier is used as the neural-network-based classifier and a CART algorithm is employed as the rule-based classifier. Experiment results show that the proposed model can diagnose lesion location by more than 90% accuracy and can extract 10 diagnosis inference rules for this by using STROML.

Hosted file

STROML A standard machine learning dataset for diagnosis of stroke patients' lesion location based on the Barthel index and Lawton IADL scale is available at <https://authorea.com/users/726117/articles/708831-stroml-a-standard-machine-learning-dataset-for-diagnosis-of-stroke-patients-lesion-location-based-on-the-barthel-index-and-lawton-iadl-scale>





