KOMPARASI ALGORITMA *MACHINE LEARNING* UNTUK MENDETEKSI CITRA HISTOPATOLOGI KANKER

(Comparison of Machine Learning Algorithm for Detecting Cancer Histopathological Images)

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ABSTRACT

The study compares the performance of machine learning algorithms for cancer classification in histopathology images. The algorithms compared Gray Level Co-Occurrence Matrix (GLCM) + Learning Vector Quantization (LVQ) with two feature selection is Principal Component Analysis (PCA) and regression analysis, as well as Convolution Neural Network (CNN) with a modified ResNet50V2 architecture. Evaluation was carried out on breast and cervical cancer datasets (train 90%, test 10% for GLCM+LVQ, and train 70%, valid 20%, test 10% for CNN). The results showed that the algorithm with the ResNet50V2 CNN model was superior in cancer histopathology classification compare to GLCM+LVQ. CNN ResNet50V2 achieved 87% accuracy for histopathology images of breast and 95% for cervical cancer, while GLCM+LVQ with PCA feature selection only achieved 57,5% for breast and 65% for cervix. ResNet50V2 CNN can be a more effective choice for cancer classification in histopathology images

Keywords: Computer Vision, Histopathology Images, Breast Cancer, Cervical Cancer, Gray Level Co-Occurrence Matrix, Learning Quantization Vector, Principal Component Analysis, Regression Analysis, Convolutional Neural Network, ResNet50V2, Pattern Recognition, Feature Selection.