

IMPLEMENTATION OF LOCAL BINARY PATTERN AND K-NEAREST NEIGHBOR ON FACE MASK DETECTION

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ABSTRACT

Masks are pretty important in today's pandemic; the use of masks to prevent exposure to the COVID-19 virus is highly recommended. The authors built a system for calculating training and testing accuracy using masked and non-masked facial images in this study. This study aims to create a system capable of detecting the use of masks on a person's face. The dataset used is face data that uses masks and does not use masks and is obtained by taking explicit photos of sources and taking datasets from the Kaggle.com website. The feature extraction method used is the Local Binary Pattern with the K-Nearest Neighbor classifier. The dataset used is 1000 images, with details of 500 face images using masks, and the rest are facial images that do not use masks. Then the data is separated into training data and test data, with a ratio of 80% and 20%. The highest accuracy results in the training process are found in the two algorithms used, namely Euclidean and Manhattan at 100% with a value of $K = 1$, while the highest accuracy of the testing process is in Alogirtma Manhattan at $K = 5, 7, \text{ and } 9$ with an accuracy of 99.5%.

Keywords: K-Nearest Neighbor, Local Binary Pattern, Face Mask Detection