

Ekstraksi Data Pernapasan Menggunakan Sensor RGB-Thermal Pada Perangkat Mobile

Respiratory Data Extraction Using RGB -Thermal Sensor on Mobile Devices

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ABSTRACT

Respiratory rate sensitivity is a fundamental vital sign of different pathological conditions. Respiration measurements can be screened to some extent. So far, the measurement of respiratory volume has been using a spirometer through direct contact. Where during the COVID-19 pandemic a non-contactless measurement is needed to determine the presence or absence of respiratory disorders. This study aims to utilize thermal imaging to extract non-contact respiratory data in people who wear masks and without masks based on mobile around the nostrils. Based on the results of the respiratory data obtained, normal breathing has several characteristics including other periods of regular breathing waves, fewer wave frequencies, a maximum deviation of about 1 degree Celsius per wave and has a more tenuous distance along the waves. Abnormal breathing has a regular period of breathing waves and more wave frequencies with a maximum deviation that is higher than normal data, which is about 2 degrees Celsius in each wave and also has short waves or density distances. Based on the results of the data transformation into an RGB image with a total of 60 data and produces an RGB image with a size of 60 x 60 pixels. A normal breathing image has an image pattern with an uneven color mapping. In contrast to the abnormal breathing image, it has a uniform color mapping pattern which is dominated by one. In both the normal and abnormal transformed images, the false edges are opposite with different locations.

Keywords: *Respiratory, thermal imaging, data extraction*