

Purwarupa Sistem Deteksi COVID-19 Berbasis Website Menggunakan Algoritma Convolutional Neural Network

Title	Purwarupa Sistem Deteksi COVID-19 Berbasis Website Menggunakan Algoritma Convolutional Neural Network
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Abstract	<p>COVID-19 is a disease caused by coronavirus 2 (SARS-CoV-2). This virus belongs to the group of viruses that infect the respiratory system. Furthermore, the rapid rate of spread has made several countries implement a policy of implementing a lockdown to prevent the spread of this virus. In Indonesia, the government implemented the policy of "Pemberlakuan Pembatasan Kegiatan Masyarakat (PPKM)" to suppress the spread of this virus. Based on data from the Task Force for the Acceleration of Handling COVID-19 of the Republic of Indonesia, the number of confirmed positive cases as of August 6, 2021 is 3,568,331 people with a death toll of 102,375. The existence of the COVID-19 vaccine is currently under threat, this is due to the emergence of new variants of the COVID-19 virus. The RT-PCR method as the main standard used throughout the world in detecting this virus has a fairly high specificity, which is around 95 percent, which is a manual process that can only be done by health workers. In addition, this test takes a long time and the number of testing facilities is limited. The presence of X-ray scanning machines in hospitals can be used to increase the availability of COVID-19 testing facilities. The thoracic x-ray image generated by the scanner can be used to detect the virus easily, quickly and precisely. In this study, a website-based system was designed to detect the COVID-19 virus in thoracic x-ray images using a convolutional neural network algorithm. The results obtained show that this system is able to classify chest x-ray images into three classes, namely COVID-19, Viral Pneumonia, and normal. The accuracy value obtained is 89.6% and the F1 value is 87.9%.</p>
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