Exploring Real Word Applications of Computer Vision

Computer Vision Application are seen throughout the day in broad field of different occupations. Most of these occupations run off Computer Vision Applications such as facial recognition, autonomous vehicles, medical image analysis or retail checkout systems just to list a few. Among these Computer Vision Applications, Medical Image Analysis stands out the most to me. Being that Radiology and Sonography piqued my interest in the health field, I am drawn to learn more about Medical Image Analysis.

Let us start off with the definition of Medical Image Analysis. Medical Image Analysis, also known as MIA, is the process of extracting useful information from medical images, often using computational methods.

How Medical Image Analysis works?

Medical Image Analysis works by using film or sensor captures of radiation passing through the body and registers the image. Medical image analysis is a series of machines heavily used within the medical field. Machines such as X-rays, ultrasounds, endoscopy, optical coherence tomography (OCT), computerized tomography (CT), molecular imaging (MI), and magnetic resonance imaging (MRI), are just a few to name.

What are the main components of Medical Image Analysis technology?

The main components of Medical Image Analysis include image information and reconstruction, then image processing and analysis.

The first steps include Data Acquisition or image information which is the process of capturing visual information from the scene and converting it into a digital image that computers can process. This step must be taken to go ahead to the next step.

Imaging processing performs operations on an image to make it better or to get vital information. This process can include action, resize, crop and other enhancements to improve the image. These things help to diagnose health conditions with images finding diseases.

Even with the progress of Medical Image Analysis growing there are a few advantages plus challenges such as low solution, important level of noise, low contrast, geometric deformations, and presence of imaging. The advantages could be faster diagnosis while challenges could be privacy issues.

Being that AI (Artificial Intelligence) is improving, the future of Medical Images Analysis is becoming more frequent even though it has been around for years. MIA can find issues and give healthcare workers a faster and easier way to diagnose, plus more time to focus on patients. As technology improves solutions are more affordable and compact. Allowing patients to be seen quicker or without the hassle of staff transporting equipment or patients' multiple times.

"Medical Imaging Trends and Key Components." *Arrow*, 2022, www.arrow.com/en/research-and-events/articles/medical-imaging-trends-and-key-components.

"Machine Learning for Medical Imaging Analysis Demystified." *YouTube*, 2020, www.youtube.com/watch?v=PC2W9AZfUwk.

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