

Deep learning based breast cancer detection system using fog computing

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Abstract

Among the different types of cancers, more women are suffering from breast cancer. Breast cancer can be identified by mammograms or using ultrasounds. Early detection of the cancer can be used to minimize the complexities the women will face. Deep learning based techniques such as convolutional neural networks (CNN) are used to detect the cancer from mammograms or ultrasound scans. In this study, VGGNet based CNN is used to detect the cancer cells. A novel architecture for collecting, processing and storing of patient data is proposed in this study involving a fog layer. This study achieved a high accuracy, sensitivity and specificity compared to previous studies.

Subject Classification: 68T07.

Keywords: Breast cancer, Deep learning, Convolutional neural networks, Fog computing.

I. Introduction

Breast cancer is the most common cancer among women worldwide. 19.3 million new cases of cancer are reported in 2020. 2.3 million new cases of breast cancer are found among them [1]. In 2018 the most common cancer was lung cancer and breast cancer came in second place. But in 2020 that situation is changed. This can be due to unhealthy habits of the people. By increasing the awareness of people, the causes for breast cancer can be reduced. The number of deaths can be reduced by early detection and diagnosis of the disease. Mammography is one method of screening

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