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**Abstract**

Cancer is a leading cause of death and disability word-wide and there is a significant growth of cancer in developing countries. Nearly 70% of Indian population lives in rural India. However, nearly 95% of cancer care facilities are in urban India. Thus,  the mortality rates are double in rural areas. In India, cervical cancer contributes to approximately 45-67% of all cancers in women. Basis of this stats we can consider the seriousness of this cancer. There are very few facilities of disseminating cancer awareness, special .trainer are required for manual judging of cervical symptoms they are also very few in number and allocated in most of known urban hospitals, Even the biopsies or the blood samples are sent to cities and the reports take weeks to come back it leads to advancement in diseases , because of all these reasons manual screening may not be feasible for wide-scale implementation. we are using convolutional neural network and concepts of deep learning as it learns meaningful kernels that stimulates the extraction of visual features such as edges ,size ,shape and colors in image classification A deep prediction model is built using CNN network to classify the various grades of cancer normal, mild ,moderate, severe and carcinoma We have taken dataset from pap smear cervical dataset as it is most effective image based cancer detection tool categorizing cervical cells as normal and abnormal and achieved acccracy 86%.

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