

Cervical Cell Classification Using Random Forests

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Abstract : The detection of pre-cancerous changes using a Pap smear test of cervical cell is the important step for the early diagnosis of cervical cancer. The Pap smear test consists of a sample of human cells taken from the cervix which are analysed to detect cancerous and pre-cancerous stage of the given subject. The manual analysis of these cells is labor intensive and time consuming process which relies on expert cytotechnologist. In this paper, a computer assisted system for the automated analysis of the cervical cells has been proposed. We propose a morphology based approach to the nucleus detection and segmentation of the cytoplasmic region of the given single or multiple overlapped cell. Further, various texture and region based features are calculated from these cells to classify these into normal and abnormal cell. Experimental results on public available dataset show that our system has achieved satisfactory success rate.

Keywords : cervical cancer, cervical tissue, mathematical morphology, texture features

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