DETECTION AND GRADING OF CANCER USING HISTOPATHOLOGICAL IMAGE ANALYSIS

M. DHIVYA[1], S. DEEPA[2], S. ANBUMANI[3] & R. KAVIN[4]

[1,2]PG Scholar, Assistant Professor, Department of ECE, Excel Engineering College, Komarapalayam, Tamil Nadu, India

[3]Assistant Professor, Department of ECE, Excel Engineering College, Komarapalayam, Tamil Nadu, India

[4]Assistant Professor, Department of EEE, Excel College of Engineering and Technology, Komarapalayam,
Tamil Nadu, India

ABSTRACT

Cancer is one of the most important health problems that threat the human life. The likelihood of curing cancer increases with its early diagnosis and correct grading, for which his to pathological examination is routinely used. The developed novel model uses both structural and statistical pattern recognition techniques to locate and characterize the biological structures in a tissue image for tissue quantification. This approach mainly includes three steps. They are graph generation for tissue images and query glands, localization of key regions, and feature extraction from the key regions. Unlike conventional approaches, this model quantifies the located key regions with structural and textural features extracted from the images. Then based on the extracted key features it classifies the images into two groups low and high grade with the help of SVM (Support Vector Machine) classifiers. The developed model leads to higher classification accuracies, compared against the conventional approaches that use only statistical techniques for tissue quantification.

KEYWORDS: Histopathological Examination, Pattern Recognition, Graph Generation, Key Features, and Support Vector Machine Classifiers