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Ghulam Jillani Ansari, Jamal Hussain Shah, Mussarat Yasmin, Muhammad Sharif,
Steven Lawrence Fernandes



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A NOVEL MACHINE LEARNING APPROACH FOR SCENE TEXT EXTRACTION

Ghulam Jillani Ansari^a, Jamal Hussain Shah^a, Mussarat Yasmin^a, Muhammad Sharif^a, Steven
Lawrence Fernandes^b

^aDepartment of Computer Science, COMSATS Institute of Information Technology, Wah Cantt,
Pakistan

^bDepartment of Electronics and Communication Engineering, Sahyadri College of Engineering
& Management, Mangaluru, India

ghulamjillani78@gmail.com, jamalhussainshah@gmail.com, mussarat@ciitwah.edu.pk,
muhammadsharifmalik@yahoo.com, steven.ec@sahyadri.edu.in

*Corresponding Author: Mussarat Yasmin (email: mussarat@ciitwah.edu.pk)

Abstract Image based text extraction is a popular and challenging research field in computer vision in recent times. In this paper, an exigent aspect such as natural scene text identification and extraction has been investigated due to cluttered background, unstructured scenes, orientations, ambiguities and much more. For text identification, contrast enhancement is done by applying LUV channel on an input image to get perfect stable regions. Then L-Channel is selected for region segmentation using standard segmentation technique MSER. In order to differentiate among text/non-text regions, various geometrical properties are also considered in this work. Further, classification of connected components is performed to obtain segmented image by the fusion of two feature descriptors LBP and T-HOG. Firstly both features descriptors are separately classified using linear SVM_(s). Secondly the results of both are combined by applying weighted sum fusion technique to classify into text/non-text portions. In text recognition, text regions are recognized and labeled with a novel CNN network. The CNN output is stored in a text file to make a text word. Finally, the text file is searched through lexicon for proper optimized scene text word incorporating hamming distance (error correction) technique if necessary.

Key words: Text Detection, Text Recognition, CNN, LBP, SVM

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