VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama", Belgaum-590 014, Karnataka.

A Technical Seminar Report

On

"Portable Camera-based Assistive Text and Product Label Reading from Hand-Held Objects for Blind Persons"

Submitted in the partial fulfillment of the requirements for the award of the Degree of

BACHELOR OF ENGINEERING
IN
INFORMATION SCIENCE AND ENGINEERING

Submitted by

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EAST WEST INSTITUTE OF TECHNOLOGY

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

EAST WEST INSTITUTE OF TECHNOLOGY

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CERTIFICATE

This is to certify that the Technical Seminar entitled **"Portable Camera-Based Assistive Text and Product Label Reading from Hand-held Objects for Blind Persons**" presented by **Sameeksha B S, 1EW16IS089,** bonafied students of **EAST WEST INSTITUTE OF TECHNOLOGY**, BENGALURU in partial fulfillment for the award of **Bachelor of Engineering** in **Information Science and Engineering** of **Visvesvaraya Technological University**, Belgaum during the year **2019-2020**. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report. The work has been approved as it satisfies the academic requirements in respect of Technical Seminar prescribed for the said degree.

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Signature of Guide	**Signature of HOD**	**Signature of Principal**
Mrs. Bhavya T Asst. Professor, Dept. of ISE EWIT, BENGALURU	**Dr. Suresh M B** Prof & Head, Dept. of ISE EWIT, BENGALURU	**Dr. K Channakeshavalu** Principal EWIT, BENGALURU

ABSTRACT

The system proposes a camera-based assistive text reading framework to help blind persons read text labels and product packaging from hand-held objects in their daily lives. To isolate the object from cluttered backgrounds or other surrounding objects in the camera view, system first propose an efficient and effective motion- based method to define a region of interest (ROI) in the video by asking the user to shake the object. This method extracts moving object region by a mixture of Gaussians-based background subtraction method. In the extracted ROI, text localization and recognition are conducted to acquire text information. To automatically localize the text regions from the object ROI, system propose a novel text localization algorithm by learning gradient features of stroke orientations and distributions of edge pixels in an Ad boost model. Text characters in the localized text regions are then binarized and recognized by off-the-shelf optical character recognition software. The recognized text codes are output to blind users in speech. Performance of the proposed text localization algorithm is quantitatively evaluated on ICDAR-2003 and ICDAR-2011 Robust Reading Datasets. The proof-of-concept prototype is also evaluated on a dataset collected using ten blind persons to evaluate the effectiveness of the system's hardware. The User can explore user interface issues and assess robustness of the algorithm in extracting and reading text from different objects with complex backgrounds.

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