VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Belagavi – 590 010

PROJECT REPORT
ON

"DETECTION OF DRIVER'S DROWSINESS USING VIOLA JONES ALGORITHM"

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

BACHELOR OF ENGINEERING
IN
ELECTRONICS & COMMUNICATION ENGINEERING

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

MOODBIDRI – 574 225.

2015-2016

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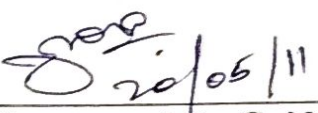## MOODBIDRI – 574 225

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

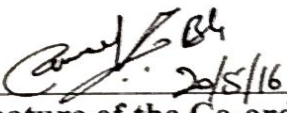# CERTIFICATE

Certified that the project work entitled "DETECTION OF DRIVER'S DROWSINESS USING VIOLA JONES ALGORITHM" is a bonafide work carried out by

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in partial fulfillment for the award of BACHELOR OF ENGINEERING in ELECTRONICS & COMMUNICATION ENGINEERING of the VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI during the year 2015–2016. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.

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ABSTRACT

Driver errors and carelessness leads to most of the road accidents occurring nowadays. The major driver errors are caused by drowsiness, drunken and reckless behavior of the driver.

Basically the project focuses on a driver drowsiness detection system in Intelligent Transportation System which focuses on abnormal behavior exhibited by the driver using Raspberry pi single board computer. A nonintrusive driver drowsiness monitoring system has been developed using viola jones algorithm.

Computer vision and alcohol gas sensor application is combined to an embedded system to achieve this goal. The proposed system is realized with an open source 5 megapixel digital camera supported embedded system board Raspberry-pi loaded with Raspbian-OS and Python-IDLE with Open-CV installed.

The eye blink of the driver is detected, if the driver's eyes remain closed for more than a certain period of time, the driver is said to be drowsy and an alarm is sounded. The programming for this is done in Python using Open-CV Haar cascade library for the detection of facial features.

The Raspberry-pi system board is serially interfaced with another open source embedded system board Arduino Uno with Uno cable which will perform some task like issuing the alarm notification and switching off the car power source to stop the car upon receiving the positive detection message from Raspberry-pi.