VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

A PROJECT REPORT ON

"DROWSINESS DETECTION AND ALERT SYSTEM USING MACHINE LEARNING"

Submitted in partial fulfillment for the award of Degree of,

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE & ENGINEERING

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CERTIFICATE

This is to certify that the project entitled **"DROWSINESS DETECTION AND ALERT SYSTEM USING MACHINE LEARNING"** has been successfully completed by

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the bonafide students of **DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING, ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2020–2021. 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

Road accident is a global tragedy with over-rising trend. A detailed analysis shows that, around half a million accidents occur in a year, in India alone. Around 60% of these accidents are caused due to driver fatigue. Hence, detection of driver's fatigue and its indication is an active research area. Most of the conventional methods are either vehicle based or psychological based. Few methods are intrusive and distract the driver, some require expensive sensors and data handling. Therefore, in this project, we propose a low cost and non-intrusive drowsiness detection system using real time image processing, face/eye detection techniques and eye blink rates. The system uses HAAR cascade classifier algorithm forface and eye detection. Drowsiness will be then detected by analyzing whether the eyes are closed over certain number of consecutive frames. If driver is found drowsy then an alarm will be triggered.