VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Belagavi – 590 010

PROJECT REPORT
ON
"AUTOMATED BRAIN TUMOR DETECTION AND IDENTIFICATION USING IMAGE PROCESSING AND SUPPORT VECTOR MACHINE TECHNIQUES"

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

BACHELOR OF ENGINEERING
IN
ELECTRONICS & COMMUNICATION ENGINEERING

Submitted By

NAME	USN
Sangeetha Lad N M	4AL12EC070
Vikith M R	4AL12EC090
Vinay K J	4AL12EC091
Prasanna A Annigeri	4AL12EC412

Under the Guidance of
Mr. YUVARAJ T.
Assistant professor
Department of E&C Engineering

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

MOODBIDRI – 574 225.

2015-2016

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

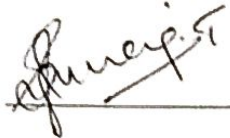## MOODBIDRI – 574 225

(Affiliated to VTU, BELAGAVI)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

CERTIFICATE

Certified that the project work entitled "BRAIN TUMOR DETECTION AND IDENTIFICATION USING IMAGE PROCESSING AND SUPPORT VECTOR MACHINE TECHNIQUES" is a bonafide work carried out by

Sangeetha Lad N M	4AL12EC070
Vikith M R	4AL12EC090
Vinay K J	4AL12EC091
Prasanna A Annigeri	4AL12EC412

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.

Signature of the Guide
Mr Yuvaraj T.

Signature of the H.O.D
Prof. Raghavendra Rao A
H. O. D.
Dept. Of Electronics & Communication
Alva's Institute of Engineering & Technology
MOODBIDRI - 574 225

Signature of the Principal
Dr. Peter Fernandes

PRINCIPAL
Alva's Institute of Engg. & Technology,
Mijar, MOODBIDRI - 574 225, D.K.

EXTERNAL VIVA

Name of the Examiners

Signature with date

1...

....

2...

....

ABSTRACT

A modified image segmentation techniques were applied on MRI scan images in order to detect brain tumors. Also, a modified Support vector machine technique (SVM) model that is based on learning vector quantization (LVQ) with image and data analysis and manipulation techniques is proposed to carry out an automated brain tumor classification using MRI-scans. The assessment of the modified SVM classifier performance is measured in terms of the training performance, classification accuracies and computational time. The simulation results showed that the modified SVM gives rapid and accurate classification compared with the image processing and published conventional SVM techniques. Simulation results also showed that the proposed system out performs the corresponding SVM system and successfully handle the process of brain tumor classification in MRI image with 100% accuracy when the spread value is equal to 1. These results also claim that the proposed LVQ-based SVM system decreases the processing time to approximately 79% compared with the conventional SVM which makes it very promising in the field of in-vivo brain tumor detection and identification.