VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI - 590018

Mini Project Report

On

"IRIS SEGMENTATION"

A report submitted in partial fulfillment of the requirements for

COMPUTER GRAPHICS AND IMAGE PROCESSING LABORATORY (21CSL66)

In

Computer Science and Design

Submitted by

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CERTIFICATE

This is to certify that the Computer Graphics and Image Processing Laboratory with Mini Project entitled **"IRIS SEGMENTATION"** has been completed by

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The Bonafide students of the **Department of Computer Science & Design, Alva's Institute of Engineering and Technology** in **DEPARTMENT OF COMPUTER SCIENCE & DESIGN** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2023–2024. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The Mini Project report has been approved as it satisfies the academic requirements concerning the Mini Project work of Computer Graphics and Image Processing subject prescribed for the Bachelor of Engineering Degree.

Dr. Pushparani M K
Mini Project Guide

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ABSTRACT

This mini-project explores the practical implementation of computer vision techniques for real-time iris detection and segmentation. Leveraging MediaPipe's FaceMesh model and OpenCV, the project demonstrates a robust framework capable of detecting and highlighting irises in live webcam feeds.

The FaceMesh model is employed to accurately locate facial landmarks, including the positions of the left and right irises. Utilizing OpenCV's image processing capabilities, the project calculates and visualizes the irises by drawing minimum enclosing circles around the detected landmarks. This approach ensures real-time performance, essential for applications requiring immediate feedback.

The project not only showcases the technical integration of these tools but also lays the groundwork for future advancements in gaze tracking, facial expression analysis, and broader facial recognition applications. By providing a foundational understanding of facial landmark detection models, the project illustrates their potential to enhance human-computer interaction and facilitate innovative applications across various domains, including healthcare, education, and security.