in partial fulfillment for the award of the degree of

BACHELOR'S DEGREE

IN

COMPUTER SCINECE ENGINEERING IN

SPECIALIZATION IN ARTIFICIAL INTELLIGENCE

AND MACHINE LEARNING

Chandigarh University

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IMAGE PROCESSING USING PYTHON

A PROJECT REPORT

Submitted by

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DEPARTMENT OF APEX INSTITUTE OF TECHNOLOGY

PROJECTPROPOSAL

1. Project Title: - Image Processing using python

2. Project Scope: - (Max 500 words)

OBJECTIVE : -

Image processing using Python is to leverage the language's versatile libraries and tools to analyze, manipulate, and enhance digital images. By employing libraries such as OpenCV, NumPy, and Pillow, the goal is to develop efficient algorithms for tasks like image filtering, segmentation, object recognition, and feature extraction. Python's simplicity and readability make it an ideal choice for image processing tasks, enabling researchers and developers to implement complex computer vision applications with ease. The objective extends to fostering innovation in fields such as medical imaging, autonomous vehicles, and augmented reality, where Python's extensive ecosystem and community support play a crucial role. Ultimately, the objective is to harness the power of Python to streamline image processing workflows, enabling advancements in visual data analysis and contributing to diverse applications across various industries.

KEY FEATURES : -

Image Generation: Creating 3D,Animated and High Quality Images.

Object Detection: Detecting Objects in the reference Image(3D Image)

Enhancing Quality: Quality enhancement of images using Stable Diffusion.

Converting Images into different variants like Animated, Illustrated, Pencil art,Sticker,Cartoon

Image Enhancement: Implement algorithms for sharpening, blurring, and colour correction.

Image Analysis: Integrate tools for object detection, segmentation, and feature extraction.

Image Manipulation: Develop functions for resizing, cropping, and geometric transformations.

Filters and Effects: Incorporate a variety of filters and special effects for creative image editing.

DELIVERABLES :-

Functional Image Processing System.

User-friendly GUI.

Documentation: User guide, API documentation, and developer documentation.

Codebase: Well-organized and commented Python code.

Test Reports: Comprehensive testing reports highlighting system performance

CONSEQUENCES :

Algorithms, UI, compatibility, errors, libraries, security, docs, testing, scalability.

3. Requirements: -

- Hardware Requirements

1. Windows Laptop
2. Internet Connection
3. Graphics Processing unit

- Software Requirements

1.Python

2.GitHub

3.Machine Learning Libraries

STUDENTS DETAILS

Name	UID	POSITION
Hiba Saudha	22BAI70005	Python developer
Saeed FahIm	22BAI70391	Python developer
Gouri B J	22BAI70485	Researcher
Meenakshy	22BAI71194	UI/UX developer

APPROVAL AND AUTHORITY TO PROCEED

We approve the project as described above, and authorize the team to proceed.

Name	Title	Signature (With Date)