

**International Institute of Professional Studies**

**DAVV, Indore**

Project Synopsis

TOPIC

Augmented reality using python

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**Objective:**

In AR development using OpenCV, the first step is to capture the real-world environment using a camera. The camera feed is then processed to detect and track specific objects or markers. Once the objects or markers are detected, the digital information can be overlayed onto the real-world environment to create the AR experience.

**Description:**

Augmented Reality (AR) is a technology that enhances the real-world environment with digital information. OpenCV, an open-source computer vision library, provides the tools to develop AR applications using Python.

OpenCV provides a wide range of computer vision techniques and algorithms, such as object detection, image processing, and feature extraction, which can be used to create AR applications. These techniques can be used to track and augment objects, recognize hand gestures, and create AR interfaces, among others.

Step-1: Capturing the real-world environment using a web cam or camera.

Step-2: Detecting object for AR to display on.

Step-3: Tracking specific object or marker for overlaying.

Step-4: Information is overlayed(displayed) onto the real-world environment.

**Technology used:**

Hardware:

* An external web cam.

Software:

* Python (Library using Open CV).

**Future use:**

* Can be used in AR glasses.
* Can be used in educational institute.
* Can be used in army surveillance.

**Conclusion:**

In summary, augmented reality, we learned that technology allows the overlaying of virtual objects in real-world environments or objects. It uses a combination of technologies including SLAM, depth tracking, and natural feature tracking, and object recognition, among others.

Using OpenCV with Python provides a powerful and flexible platform for developing AR applications. The combination of OpenCV's computer vision techniques and Python's ease of use and large community support makes it an attractive choice for AR developers.