5.1 INTRODUCTION TO AUGMENTED REALITY (AR):

Augmented Reality (AR) is a technology that overlays digital information, such as images, videos, or 3D models, onto the real-world environment. Unlike Virtual Reality (VR), which immerses users in a completely virtual environment, AR enhances the real world by adding digital elements. AR is experienced through devices like smartphones, tablets, smart glasses, and other wearable technologies.

COMPUTER VISION FOR AR:

Computer vision is a key component of AR systems, enabling them to understand and interpret the real-world environment. The main tasks of computer vision in AR include:

1. Image Recognition:

AR systems use image recognition algorithms to identify and track objects or markers in the real world. These markers act as triggers for displaying digital content.

2. Object Tracking:

Computer vision helps AR devices track the movement of objects in the real world. This is crucial for maintaining the alignment of digital content with the physical environment.

3. Scene Understanding:

AR systems analyze the scene through computer vision to understand the geometry, depth, and structure of the environment. This information is used to place virtual objects realistically in the real world.

4. Gesture Recognition:

Computer vision is applied to recognize gestures and movements made by users. This allows for interactive control of AR applications without physical touch.