# Looking for LiDAR on Android? Google has ARCore as the Answer

A few days back I was going through my news feed and came across this piece of information “iPhone 12 Pro with HDR Video Recording, LiDAR sensor launched in India”.  LiDAR, the term got me interested in knowing about it as I had never heard about it before. To satiate my curiosity I decided to read about it. As I started going through online articles, I was amazed to know how LiDAR has revolutionized the tech and mobile industry. LiDAR is not a current development; it has been conceptualized for a long time now. However, in the recent past, it has started gaining popularity due to its diverse applications.

LiDAR stands for Light Detection and Ranging principally works on the idea of sending a laser beam to the target object and calculating the time it takes to reflect from that point. The amount of time the laser pulse takes to return to the source helps in determining the distance of that object.

For some of you, the concept might sound familiar to that of RADAR, SONAR as both the technologies are used to map the surrounding objects through radio and sound waves respectively. But wait here is a twist LiDAR helps you to project a 3D model of the target object, which was not possible in both the former technologies.

But the article that I read was about the LiDAR sensor on iPhone. Wait! What? What is the distance measuring sensor doing on a phone? You must be also thinking the same. But like I said LiDAR has a wide range of applications, using in a phone is one of them. LiDAR is basically a Time-of-Flight (ToF) camera. While the other phones just use a single laser beam to track the distance, LiDAR here sends out a train of a laser beam that calculates the distance of the mapped target object in three-dimensional. Better capture in low-light surroundings, enhance night portrait mode features are some of the guaranteed improvisations.  The improved accuracy of the camera will definitely give a better AR experience. Well, that’s some good news for gaming enthusiasts and online shoppers.

If the iPhone has LiDAR, what do android phones have in store for its users?

The answer is ARCore; it’s a Google brainchild that provides the AR experience for its users. Google’s AR journey started in 2014 with the release of the Tango Platform. It was doing well until 2018 when Google decided to scrap the platform for something better. That is how ARCore came into the picture.

ARCore mainly works on the three parameters to get the basic understanding before superimposing the real-life setting with virtual objects:

  Motion tracking

  Environmental understanding

  Light estimation

The pre-requisite is the phone should be ARCore enabled; the technology is supported on Android 7.0(Nougat) and above. Firstly, using the phone’s camera AR system tries to locate the device’s position through a gyroscope, accelerometer, and other inbuilt sensors. Then it identifies the topography of the room, surroundings. This part includes determining the flat surfaces present in the room such as a table, board, stairs, etc. The third parameter taken into account is the ambient light or the source of light in the given surroundings. Taking these all into account the ARCore system gives the user a seamless experience.

Recently, Google announced the Depth API feature to enhance the AR experience. Depth API is supported by ARCore 1.18 for Android and Unity and AR Foundation enabled devices. It basically creates a depth map which is an image that contains data about the distance, elevation from a given source. The depth map is created by using the device’s RGB camera. The feature will enable a more engaging and real-world experience.

We have come a long way in discussing LiDAR in IPhone to AR milestones in Android devices. I hope you find this article helpful and resourceful.