

## **ABSTRACT**

*The rapid development of information technology in the presentation of information forms, making the role of information media important to win the competition to provide information precisely and quickly, one of which is through Augmented Reality (AR) to convey information digitally. Some Internet of Things (IOT) technologies have adapted AR to be embedded so that the presentation of IoT data can be presented in a more interesting and interactive way. The importance of monitoring the temperature in the server room is very crucial. If the server room temperature is not monitored and overheats, the performance of the device contained in the server room will decrease and can disrupt the network.*

*The application of AR for temperature monitoring systems in the server room of the Laboratory of Optics Faculty of Applied Sciences Telkom University is one of the proper uses of AR technology to provide real-time temperature information. The use of this technology is very effective because it will give a more real and interactive impression. With the use of AR technology as a media monitoring server for the Optical Laboratory of the Faculty of Applied Sciences, Telkom University Bandung, monitoring of the server room temperature can be done more interactively and helps so that the temperature can be monitored so as to avoid overheating the device which causes disruption to the network.*

*Applications that have been made can run well on Android smartphone devices with a minimum of OS 8.0+ (Oreo). The application can be said to be reliable proven by the temperature comparison between the application with HTC-1 obtained an average difference of 0.25 °C for hot temperatures and 0.04 °C for cold temperatures. The application can work well when the distance of the camera with the trigger area is between at least 1 meter to 9 meters in bright and dim lighting conditions although in dim conditions the AR position is unstable.*

**keywords :** *Augmented Reality, Markerless Based Tracking, Internet of Things.*