

AN IMS [ISO 21001, ISO 9001, ISO 14001, ISO 45001] CERTIFIED TRAINING INSTITUTION

**NETTUR TECHNICAL TRAINING FOUNDATION**

**PROJECT REPORT**

On

**AuraAR**

SUBMITTED BY

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*In partial fulfillment of the requirements*

*For the award of the* diploma

in

**COMPUTER ENGINEERING & IT INFRASTRUCTURE**

**NTTF ELECTRONICS CENTRE**

**ELECTRONICS CITY, BANGALORE-560100**

**2019-2022**

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AN IMS [ISO 21001, ISO 9001, ISO 14001, ISO 45001] CERTIFIED TRAINING INSTITUTION

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**CERTIFICATE**

This is to certify that the Project titled

**AuraAR**

Is a bonafide report of project done by

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IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF DIPLOMA IN COMPUTER ENGINEERING & IT INFRASTRUCTUREUNDER THE INSTITUTION NETTUR TECHNICAL TRAINING FOUNDATION**,** ELECTRONICS CENTRE, BANGALORE DURING THE ACADEMIC YEAR 2019-2022

**PROJECT GUIDE COURSE HEAD**

**EXTERNAL EXAMINER PRINCIPAL**

**ACKNOWLEDGEMENT**

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**ABSTRACT**

This project is done making lab details for NTTF Technical Training Center Bangalore. This project is project, which is developed in PHP. There is software has been configured as to access through website. This more helpful for us, because it giving the information about the lab details of the college.

The administrator will create and modify the lab details and generate the report. This project aims on developing a website which would reduce the complexity of the work done by the NTTF staffs. Any outing reports are added by the Admin can be accessed by the staffs and principal allowed through this website.

Admin used to give the username and password to the staff’s and trainees. It includes lab details activities of the trainees. It can be used easily customize as per the requirements and available resources to suit the nee of different faculties.

The main objective of this project is to provide the solution for an organization which involves computing facilities.

This software also helps the administrator and instructor(s) to maintain proper documentation of the computing system.

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**CHAPTER - I**

**INTRODUCTION**

* 1. **INTRODUCTION**

Augmented reality AR is an enhanced version if real physical world that is achieved through the use of digital visual elements, sound or other sensory stimuli delivered via technology. IoT is a combination of physical objects with virtual representations and services. Augmented reality provides an ideal interface to IoT applications by superimposing virtual information about smart objects and services on a user’s view of the real world. With help of AuraAR we can achieve interaction with Physical objects as well as receiving and instruct the Arduino to work with objects, instructing a light bulb from AuraAR to increase or decrease light intensity. We describe the use of augmented reality in IoT to provide contextual information to service users and providers and give a demonstration of an augmented reality application that we have developed and three projections of how users may interact with future context-aware applications. We also discuss some of the current research challenges and the future work that needs to be carried out to address these challenges.

Currently, solutions based on the Internet of Things (IoT) concept are increasingly being adopted in several fields, namely, industry, agriculture, and home automation. a technological solution that allows for the visualization of IoT device information in actual time, using augmented reality and a simple smartphone was developed and analyzed. In addition, the system created integrates a security layer at the level of AR to secure the shown data from unwanted eyes.

* 1. **OBJECTIVES OF THE PROJECT**

Making daily life activities innovative and attractive. AuraAR is trying to connect real world thing to adding augmented reality for better experience with a touch of digital luxury. AuraAR can bring a user an added experience of Augmented Reality with IOT in a real good manner by using software like Unity.

* 1. **SYSTEM STUDY**
     1. **EXISTING SYSTEM**

**EDUCATION**

With the current state of the Pandemic, students are using various technologies for learning. Moreover, there has been a high rise in various professionals pursuing further education degrees. Although, individuals studying for a surgeon’s degree or physician’s degree require a more practical approach in their learning. Hence, this is where the applications of AR and IoT are in utmost demand. For Example, Simbionix Simulators are 3D systems that are medical simulators. It helps professionals and students gain hands-on experience in performing Minimally Invasive Surgery.

**MILITARY**

The Los Angeles–based firm DAQRI has developed a helmet that can just protect workers from falling objects but enable them to spot hazards and help them from making mistakes when repairing equipment. The smart helmet can provide employees with guided work instruction and thermal vision to spot overheating components. The technology can reduce errors and repair time while doing away with the need to consult printed instructions. The DAQRI device is also capable of doing diagnostics and detecting hazards using thermal.

* + 1. **LITERATURE SURVEY**

According to survey of BCG (Boston consulting group) & PTC (Parametric Technology Corporation) 47% of IOT-AR started with the use of IOT. Company survey, 81% are using IOT and also exploring the possibility of using AR, while about 76% of those developing AR only solutions believing that adding IOT to their AR application would have value.

About 80% of company survey said that, they expected the payback form their investments in IOT and AR within 3 years. Experimenting with IOT and AR solutions has risen sharply since 2017, more than 80% of companies surveyed except IOT-AR solutions to become normal in the industries in next 5 years.

* + 1. **DEMERITS OF EXISTING SYSTEM**
    2. **PROPOSED SYSTEM**
    3. **MERITS OF PROPOSED SYSTEM**

**CHAPTER - II**

**SYSTEM ANALYSIS**

* 1. **USER REQUIREMENTS SPECIFICATIONS**

**HARDWARE SPECIFICATIONS**

An Android device - version ‘Oreo’ and above

RAM - 3GB and above

Above mentioned requirements are mandatory to Run AuraAR. Since we are using Unity for our project it essential to have an android of version 8 or higher, which is compatible and reliable for smoother experience for the user.

* 1. **SYSTEM SPECIFICATIONS**

**2.2.1 HARDWARE SPECIFICAITONS: -**

RAM - 12 GB and above

Processor - Intel i5 / AMD Ryzen 5 and above

**2.2.2 SOFTWARE SPECIFICATIONS: -**

**IDE :**  Visual Studio 2019

**AR Development :** Unity 3D & Vuforia Engine

**Programming Languages :** C-Sharp & Embedded C

**Android Deployment :** Android Studio

**Database :** Firebase

**API :** Blynk

**2.2.3 IOT HARDWARE SPECIFICATIONS: -**

|  |  |  |
| --- | --- | --- |
| **Component** | **Description** | **Quantity** |
| Node MCU | ESP-32 | 02 |
| Node MCU | ESP-8266 | 01 |
| Relay | 5v Single-channel | 01 |

* 1. **FINAL OUTLINE OF PROPOSED SYSTEM**

**CHAPTER - III**

**DESIGN AND DEVELOPMENT PROCESS**

* 1. **FUNDAMENTALS AND DESIGN CONCEPT**
     1. **Modules and Functionalities**
        1. **AR Light Controller**

In this module we are achieving to control the light on and off using augmented reality.

* + - 1. **AR Light Intensity Controller**

In this module with the help of UI slider in augmented reality we are controlling the light intensity.

* + - 1. **AR Heart Rate Monitoring**

In this module we are monitoring the heart-rate we can experience the real time virtualized augmented heart over user’s body.

* + - 1. **AR Color Switch Controller**

In this module we are controlling the color of LED light using augmented controller in mobile.

AuraAR is using Unity for augmented graphics the virtual buttons ON & OFF respectively by creating a target image as a base for the virtual buttons, by hovering on those button’s actions will work likewise. We are using Blynk IOT app for configuring its virtual buttons. These buttons are directly connected to Unity 3D using Blynk API.