

**SHRI RAMDEOBABA COLLEGE OF ENGINEERING & MANAGEMENT,
NAGPUR
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

ASSESSMENT OF THE PROJECT 2018-19

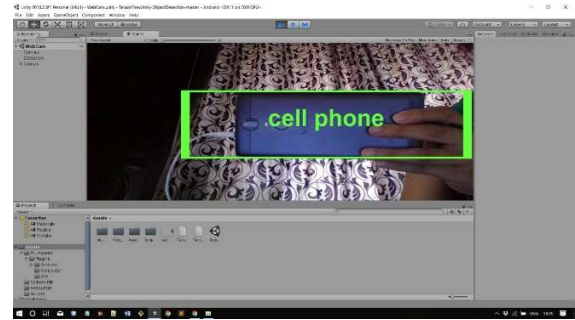
Title of the Project	M.A.V : Medical Analyzer in AR
Student Names	1. Isha Bahendwar 2. Nandini Jain 3. Riya Khandelwal 4. Ruchit Bhardwaj 5. Saburi Hindaria
Semester & Shift	VII (Shift-1)
Guide Name	Prof. Vasundhara Rathod

Criteria
1. Classification and Technology Extended Reality (Augmented Reality) Software used: Unity Game Engine, Python, C#, Arduino Software, TensorFlowSharp Hardware Used : Arduino Genuino Uno, Pulse Sensor
2. Project Objectives To develop and implement an augmented assistant that will allow the doctors to have a look at the patient's vitals which will be displayed in an augmented manner along with the graphical representation of the heart reading in BPM. Also, amateur doctors can get a detailed insight regarding a medical object with its information using the Object Detection Module built right into the Unity Game Engine using TensorFlowSharp.
3. Methodology and Implementation The pulse sensor is an analogue sensor which gives the output in the Arduino's serial plotter. These analogue readings had to be converted into a digital output. 'CoolTerm' then allowed us to save the output into a file from where it was read inside of the Unity Game Engine using a C# script. We took 1000 readings which statically showed the graphical representation of data. Also, a 3D representation of the skeleton and heart is shown. Also, as a separate entity of the project, we tried to implement Object Detection using TensorFlowSharp that allowed us to get the object detection functionality inside the Unity Game Engine.
4. Project Outcome <ul style="list-style-type: none"> An Augmented Reality application that can give a 3D representation of the patient's skeleton along with the BPM reading of the patient Object Detection functionality built right into the Unity Game Engine with the help of TensorFlow allowing amateur doctors to have a detailed glimpse of various medical objects.
5. Success of the project and Industry Involvement The project was successfully built and completed and can serve as successfully contribute towards making medical analysis less hectic and error prone.

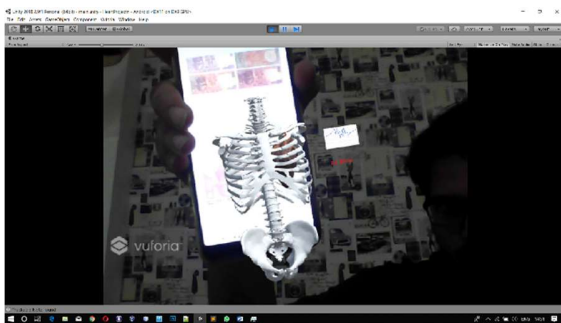
PROJECT SCREENSHOTS



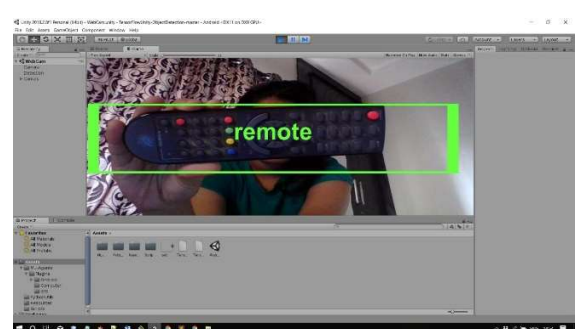
Screenshot 1: Marker-Initialization



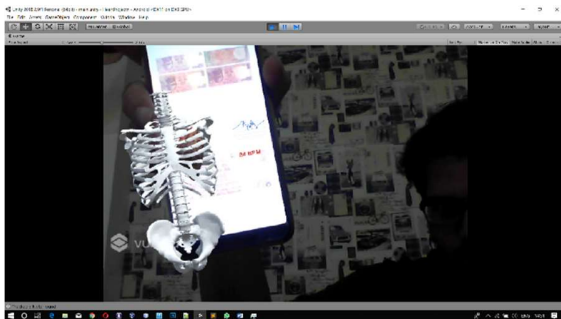
Screenshot 4: Object Detection : Cell Phone



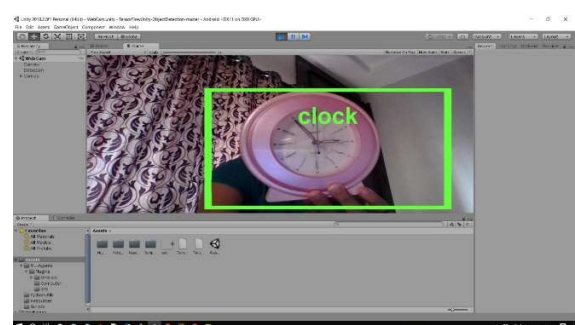
Screenshot 2: 3D Skeleton & Heart



Screenshot 5: Object Detection : Remote



Screenshot 3: Average BPM Readings



Screenshot 6: Object Detection : Clock

Prof. V. Rathod
Project Guide

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HOD, CSE

Prof. A. Raipurkar
Project Coordinator