**Synopsis**

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**AMITY SCHOOL OF ENGINEERING & TECHNOLOGY**

**Synopsis**

**B.Tech (CSE)**

**Student Name:** Arnav Singh

**Academic Session:** 2019- 2023

**Faculty Guide:** – Dr. (Ms) Vasudha Vashisht

**Dissertation Title:** Human Detection and Tracking using ML

**Introduction:** In this fast-advancing world, technology advancements wait for no one. By 2015, Tesla had already made its first self-driving auto-pilot car which could even achieve feats like drive itself to the destination even if the driver falls asleep. While keeping this advancement in our mind, we must dig deep into the million lines of code that Tesla had to write to make a full functioning body.   
  
Though in this project, we will only be paying attention to only one aspect of Tesla auto-pilot car which will be “Human Tracking and Detection”.

**Purpose/Motivation:** The purpose of our project will be mainly Human/Pedestrian tracking through a physical webcam which could potentially be used in surveillance systems or as we mentioned earlier, self-driving automobiles.

**Objective :** In this project, we have worked on the problem of human detection, face detection, face recognition, and tracking an individual. The project can detect a human and its face in a given video and storing Local Binary Pattern Histogram (LBPH) features of the detected faces. LBPH features are the key points extracted from an image which is used to recognize and categorize images. Once a human is detected in the video, we have tracked that person assigning him a label.

**Proposed Methodology:**

* First, it reads a video and processes each frame one by one.
* For each frame, it tries to detect a human. If a human is detected it draws a rectangle around it.
* After completing step 2 it tries to detect the human face.
* if a human face is detected it tries to recognize it with a pre-trained model file.
* If the human face is recognized it puts the label on that human face else, it moves to step 2 again for the next frame

**Signature of Guide:**

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