

LIST OF REQUIREMENT

Project Title : Real Time Object Detection

Project Owner : Mert Altuntaş

Project Description

The aim of this project is to detect the objects in real time with good accuracy. Objects will appear live on webcam in a squared or circled area.

Tools and Frameworks

For this project required softwares are ;

- Python 3.7 (or above) as programming language
- Anaconda Distributions to use Python libraries
- Pycharm Pro and Spyder as a developing environments
- OpenCV Libraries to detect objects
- YOLO v3-v4 Framework to detect objects
- Numpy Libraries to create matrices and making calculations
- Github Student Developer Pack for keeping project files and tracking project versions.

Required Equipment

- Windows 10 or Linux based computer
- Webcam or Additional Camera

Functional Requirements

1. First of all, the program will be a **desktop application**.
2. The program will detect objects from a webcam. Users can see the objects in a squared or circled area.
3. The program also should work in real time. All detections have to be live.
4. Also, the program will be able to detect 10-15 different objects. My dataset will be based on YOLOv3 and additionally, I will try to create my own models.

Prototyping Stages

1. For the midterm prototype, the program will be almost ready to use, It will detect a few objects from the webcam. Of course, it may not give good accuracy at this stage.
2. In the ongoing process, optimizations will be made to catch good accuracy. As a final product there will be a more improved and featured application that we have.

Additions

1. The program will detect objects, that includes human bodies, eyes and faces.
2. Also, the program will be able to detect facial emotions (like smiling) in real time.
3. The Project might have a User Interface. (If the time allows.)