OBJECT DETECTION

Course Introduction

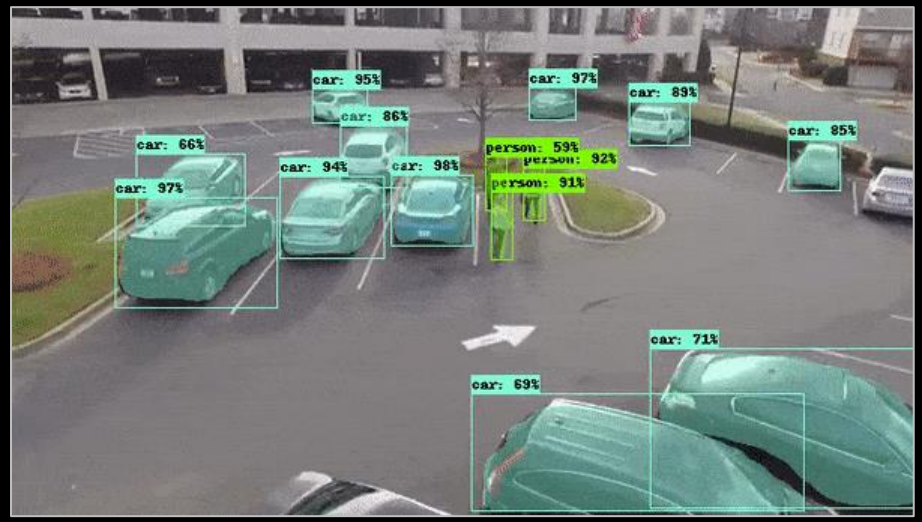
- Understanding Object Detection
- HOG and Sift
- Dalal and Trigs Detector
- DPM
- Over feat network
- Selective search
- Edge boxes
- RCNN
- Special pyramid network
- Fast RCNN
- Faster RCNN
- YOLO
- SSD
- Mask RCN
- Detectron

Classical Approaches

CNN + Classical Based Region Proposal Paradigm

CNN Based Single Shot Paradigm

Image Segmentation



Course Prerequisite

- Python: General Programing
- CNN : Image Classification Basics
- Simple Mathematics

Teaching Methodology

- Try to go into depth of each of the techniques in intuitive way rather than only showing mathematical aspects.
- We will try to reasoning each of the technique such a way we can understand why that technique come into first place.
- How object detection has evolved over time.

Applications of Object Detection

1. Self driving car

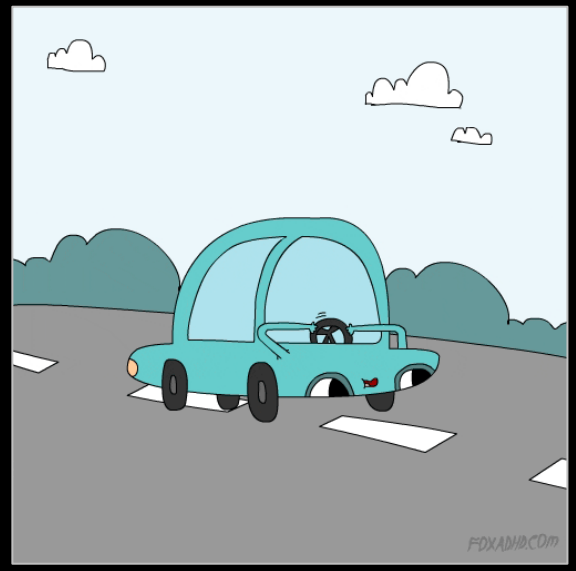


Image Credit: https://giphy.com/

Applications of Object Detection

1. Self driving car

2. Face detection and recognition

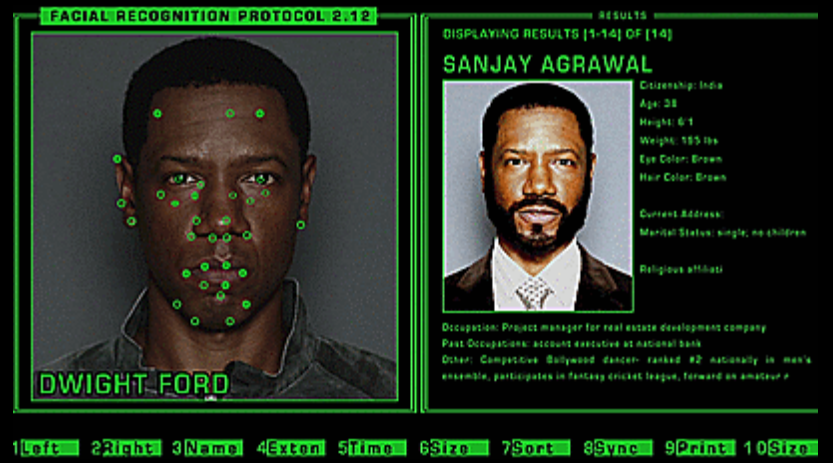


Image Credit: https://giphy.com/

Applications of Object Detection

1. Self driving car

2. Face detection and recognition

3. Traffic Detection

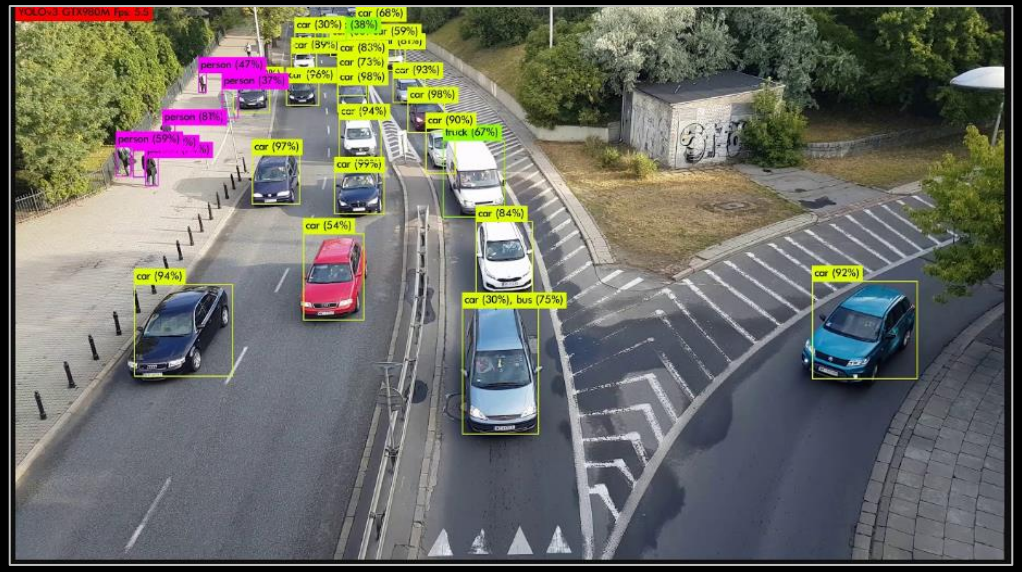
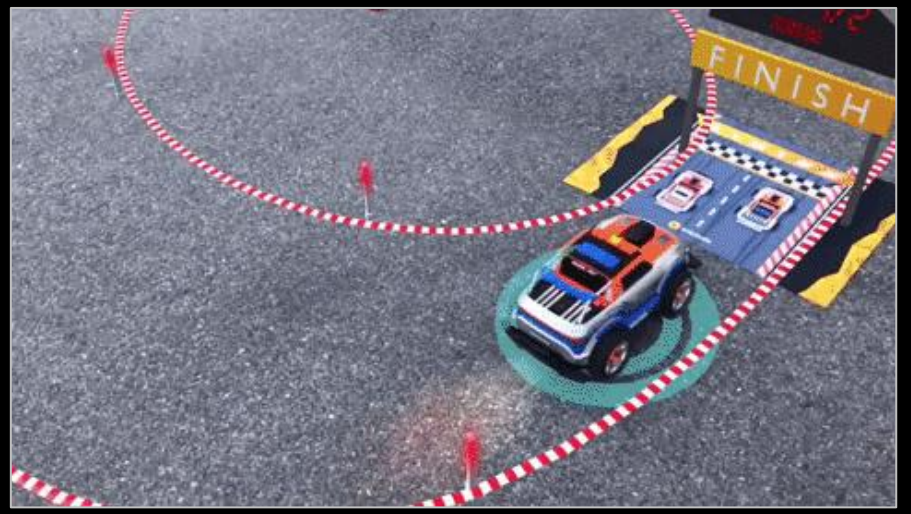


Image Credit: https://www.youtube.com/watch?v=lekdUXv82xQ

Applications of Object Detection

1. Self driving car
2. Face detection and recognition
3. Traffic Detection
4. Tracking Objects



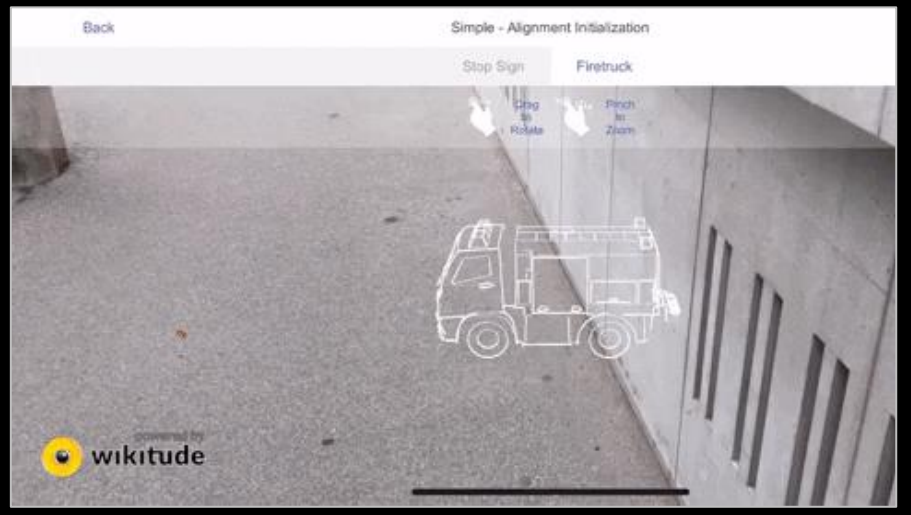


Image Credit: https://giphy.com/

Applications of Object Detection

1. Self driving car
2. Face detection and recognition
3. Traffic Detection
4. Tracking Objects
5. Manufacturing industry

Image Credit: https://learn.alwaysai.co/object-detection

Applications of Object Detection

1. Self driving car
2. Face detection and recognition
3. Traffic Detection
4. Tracking Objects
5. Manufacturing industry
6. Pose Detection or Key point Detection
7. Counting objects
8. Video surveillance and many more..

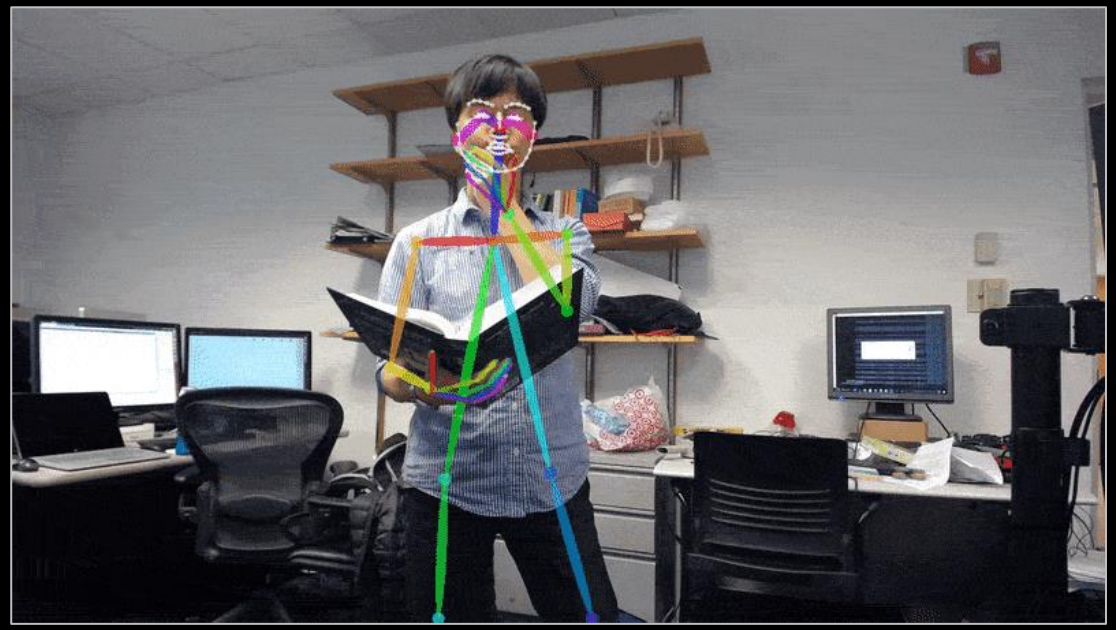


Image Credit: https://giphy.com/

Projects: End to End

- Covid Mask Detection + Distance measurement system
- Car Game Object Detection
- Student Attendance System
- General Object Detection in public
- Airbnb’s Amenity Detection
- Case Study