**EXISTING SYSTEM**

Challenging to build an algorithm that detects objects automatically using an absolutely massive training dataset. Creating accurate Machine Learning Models which are capable of identifying and localizing multiple objects in a single image remained a core challenge in computer vision.

For detecting generic objects (like laptop, notebook, pen, glasses, coffee, car, person, table, tree, “small raw tomato" or a "large ripe tomato") we want an algorithm to detect very specific objects. We need to build the best performing algorithm for automatically detecting objects.

An image classification or image recognition model simply detects the probability of an object in an image. In contrast to this, object localization refers to identifying the location of an object in the image. An object localization algorithm will output the coordinates of the location of an object with respect to the image. In computer vision, the most popular way to localize an object in an image is to represent its location with the help of bounding boxes

**DISADVANTAGE:**

Need a large dataset

Because you need a large dataset, training time is usually significant

Takes lots of time to train and stuff

With the availability of large amounts of data, faster GPUs, and better algorithms

**PROPOSED SYSTEM:**

Object Detection track, the Challenge also includes a Visual Relationship Detection track to detect pairs of objects in particular relations, e.g. "person riding a bike” as shown below image. Identifying different objects (man and objects) is an important problem on its own, but identifying the relationship between them (holding) is critical for many real-world use cases. In this Visual Relationship Detection Track Challenge, we have to build an algorithm that detects pairs of objects in particular relations: things like “person riding a bike”, "water bottle on table," or "dog inside car." The Challenge dataset includes both objects bounding boxes and visual relationship annotations.

In this case of the Challenge, we have to build to build the best performing algorithm for automatically detecting relationships triplets.

**ADVANTAGES:**

Object detection is breaking into a wide range of industries, with use cases ranging from personal security to productivity in the workplace.

It can also be used within a visual search engine to help consumers find a specific item

Powerful image analysis and objects detection