Prior Art

Object detection is the task of localizing and classifying individual object in an image. For localization we predict a set of bounding boxes around each object.

In Semantic Segmentation we perform pixel wise classification.

Instance segmentation requires to perform pixel-wise classification (Semantic Segmentation) of all objects belonging to certain class and distinguish/detect (Object Detection) all objects present in the image. It is a combination of two task which are object detection and semantic segmentation.

Instance segmentation requires to perform classification of each pixel for certain classes and assign each pixel an Object ID that distinguish physical objects from each other, like Object Detection.

Instance segmentation for scene understanding should be invariant to partial occlusion, scale, etc.

For Semantic Segmentation

Using Deep Convolutional networks several methods for Instance segmentation were proposed. Current available approach can be broadly divided into two streams which are Proposal based(Mask-RCNN) and Other.

Proposal based Method