Object extraction techniques and visual image search with Semantic web techniques

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Content

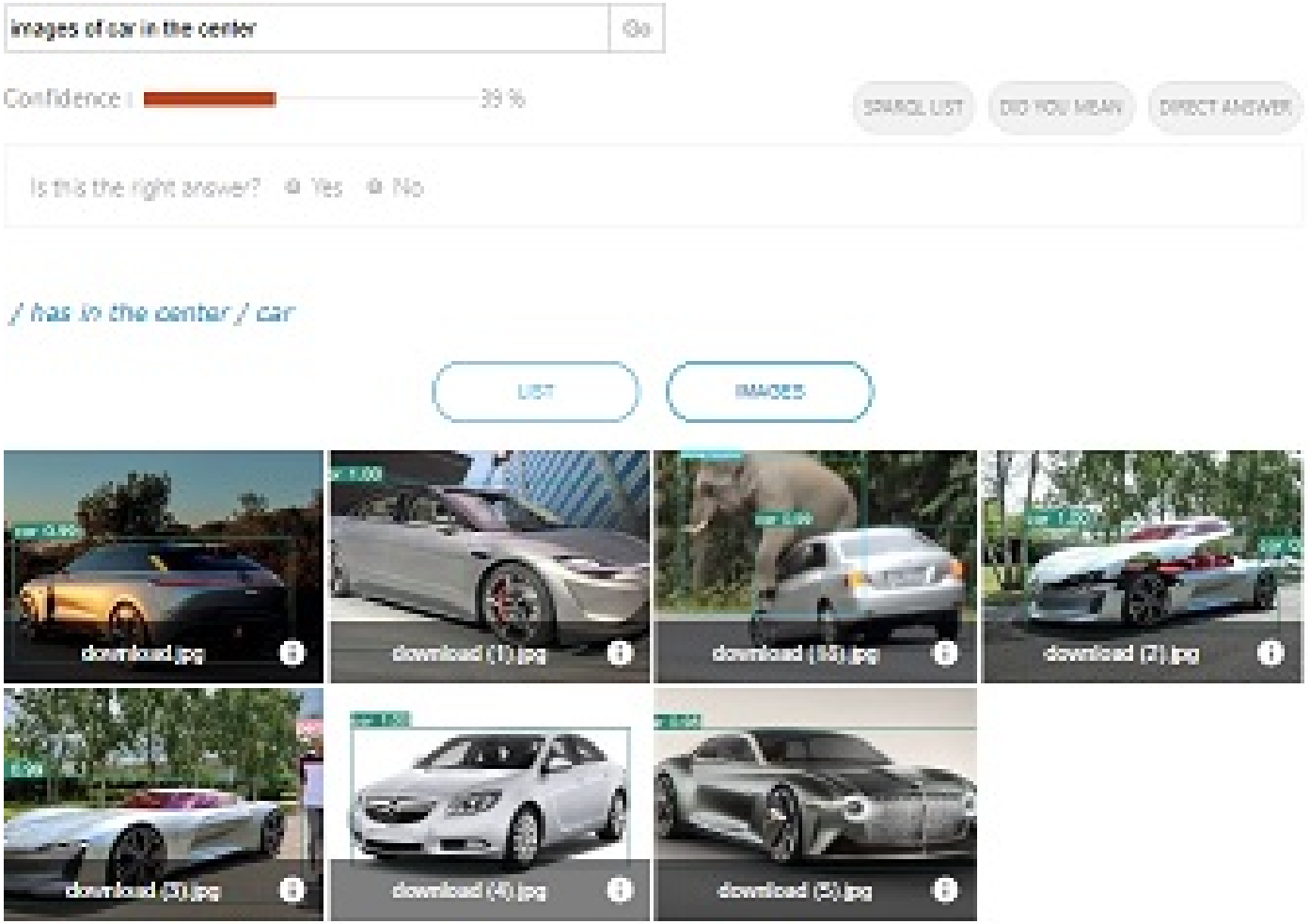
- Implementation of an Algorithm for object extraction.
- Design of a semantic web modelling for extracted data.
- Implementation of a visual image search engine through Qanswer.

Abstract

- This internship is about exploration of object detection techniques with a computer vision api and then applying visual image search with Semantic web techniques. We aim to identify relationships between objects within the image, to do that we identify the objects, then calculate their position and thereafter establish the relationships. Finally, we create a semantic web model for all the images and perform a successful visual image search with Qanswer.

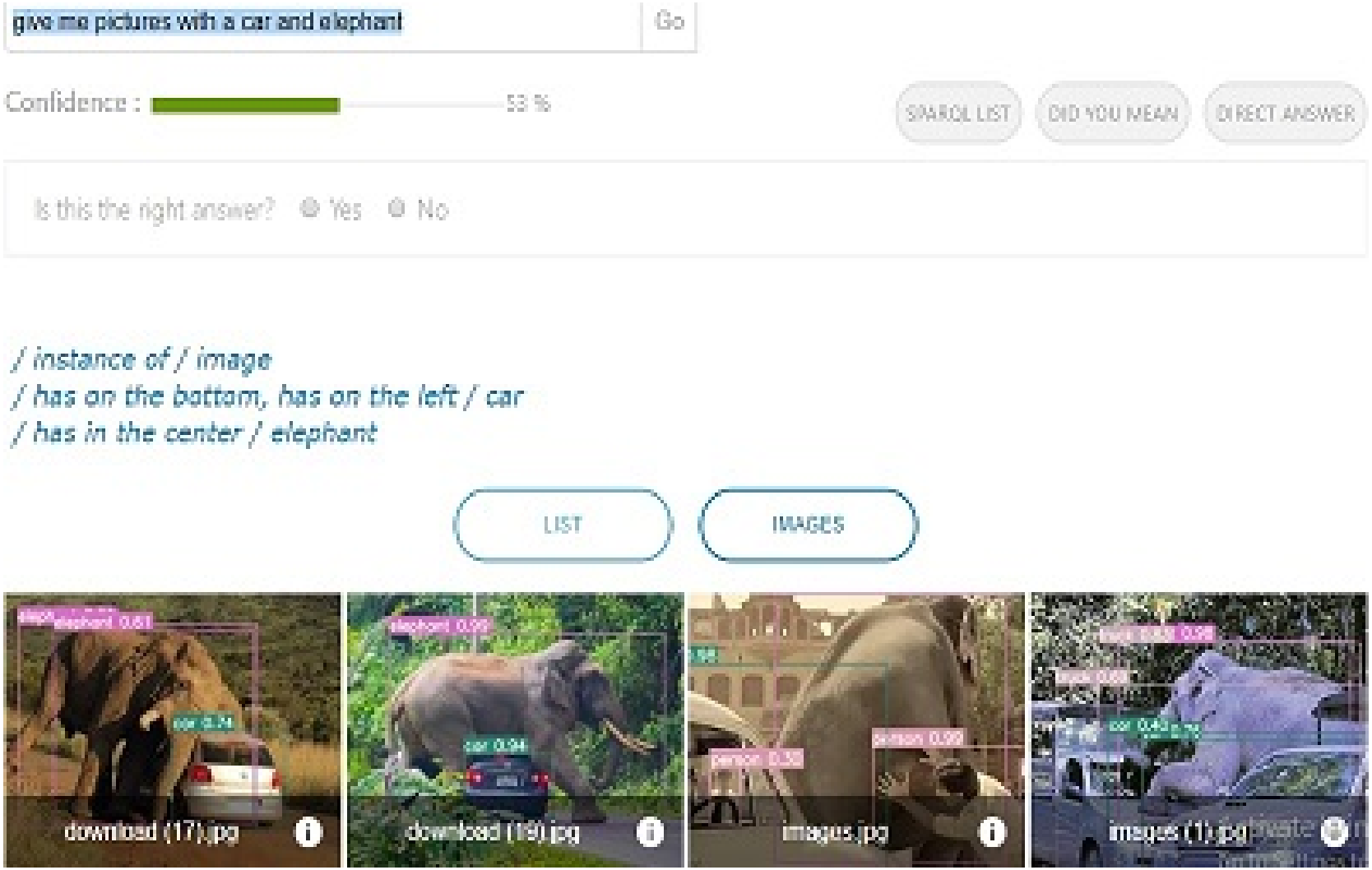
Qanswer: Image-Object Relation–'position'

- give me pictures with a car in the center



Qanswer: Image-Object Relation–'contains'

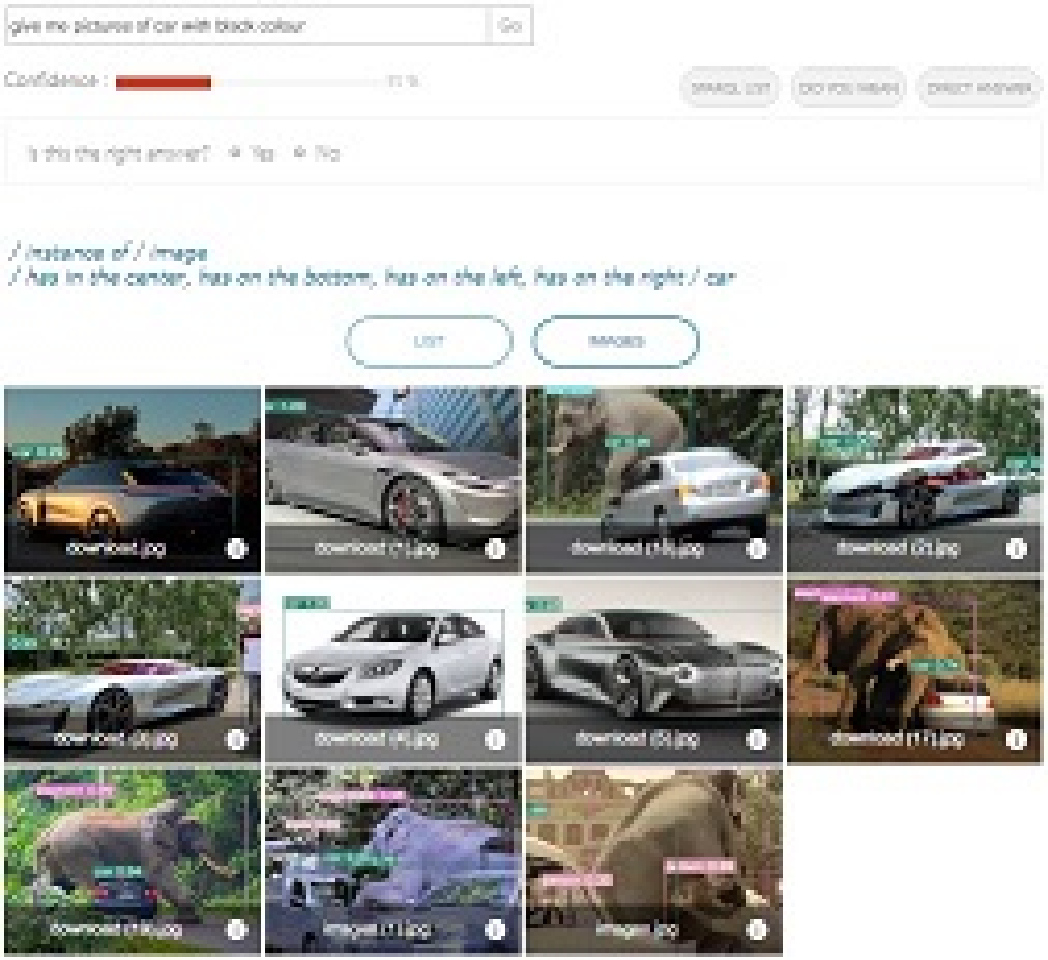
- give me pictures with a car and elephant



Qanswer: Image-Object Relation–'colour'

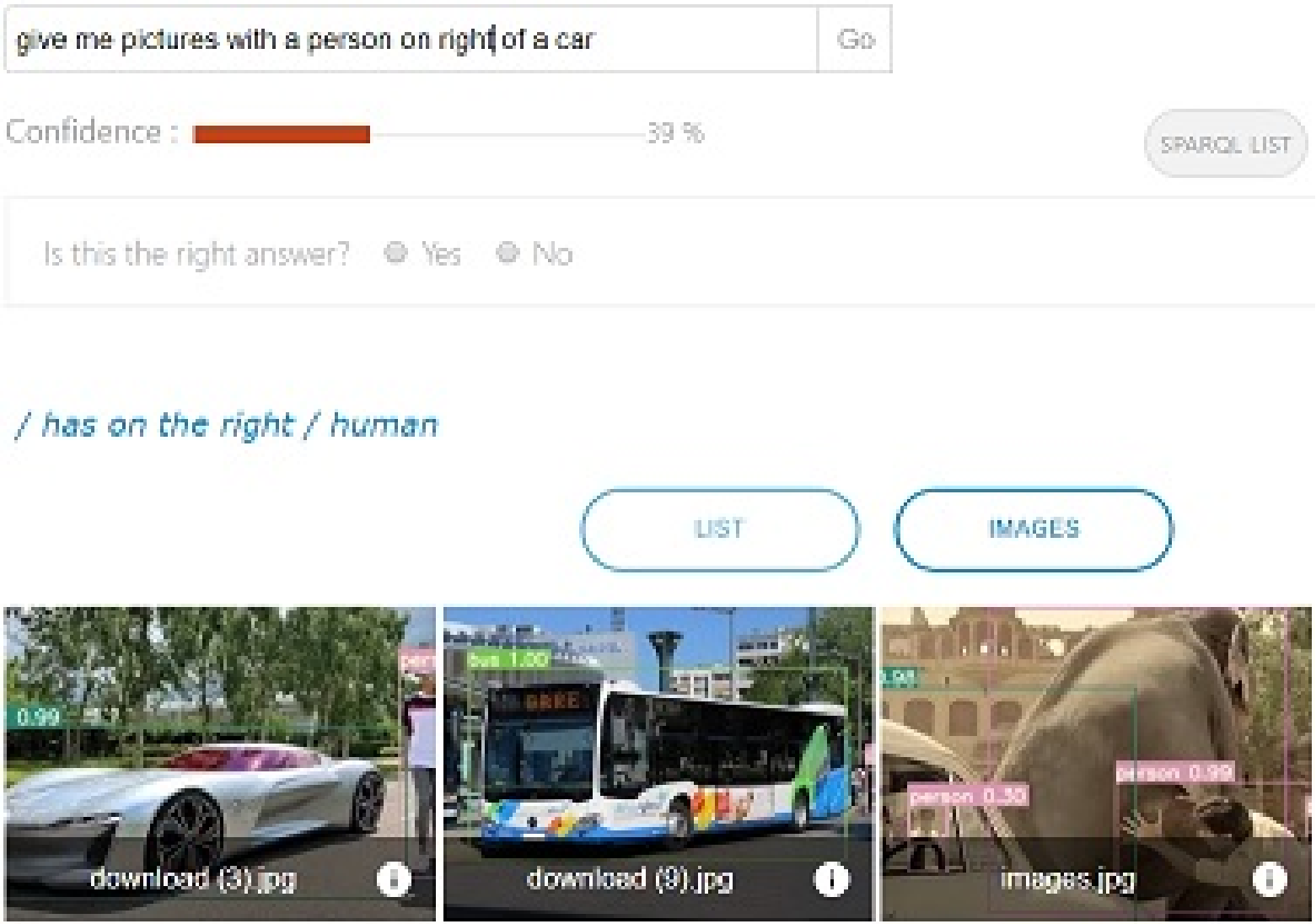
No result yet, need to implement a colour identifying algorithm

- give me pictures of car with black colour



Qanswer: Object-Object Relation–'basics'

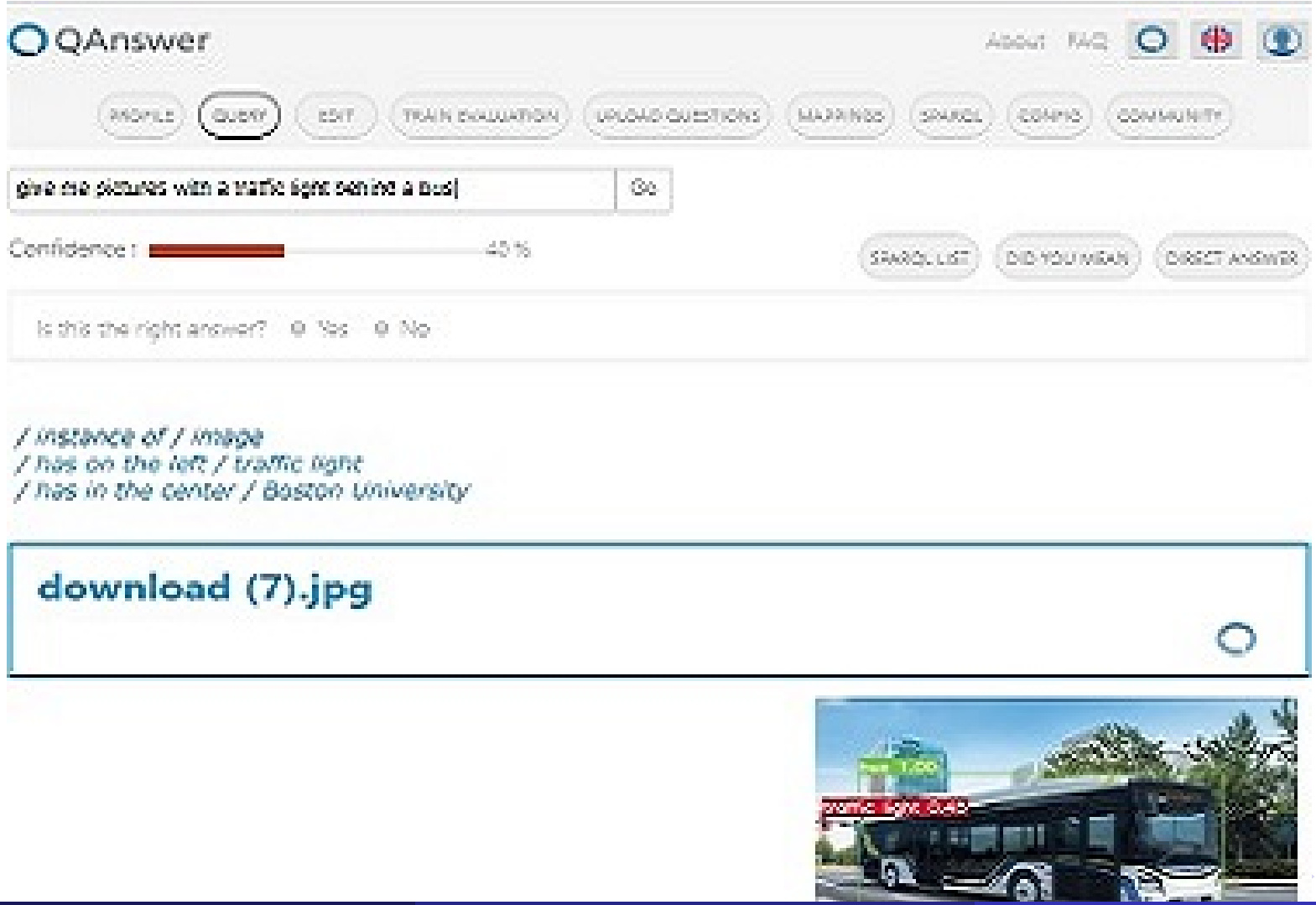
- give me pictures with a person on right of a car



Qanswer: Object-Object Relation–'with depth'

This is not supposed to work at all, but it does. Need to implement object depth identifying algorithm

- give me pictures with a traffic light behind a bus



Implementation of Yolo and use of semantic web features of Qanswer