

Object extraction techniques and visual image search with Semantic web techniques

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- 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.

- 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

images of car in the center

Confidence: 39 %

[SPARQL LIST](#)

[DID YOU MEAN](#)

[DIRECT ANSWER](#)

Is this the right answer? ☐ Yes ☐ No

/ has in the center / car

[LIST](#)

[IMAGES](#)



Qanswer: Image-Object Relation–'contains'

- give me pictures with a car and elephant

give me pictures with a car and elephant

Go

Confidence :  53 %

SPARQL LIST

DID YOU MEAN

DIRECT ANSWER

Is this the right answer? ☒ Yes ☐ No

/ instance of / image

/ has on the bottom, has on the left / car

/ has in the center / elephant

LIST

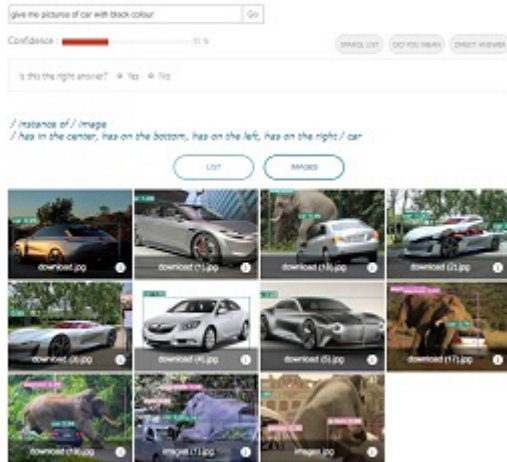
IMAGES



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

give me pictures with a person on right of a car

Go

Confidence :  39 %

SPARQL LIST

Is this the right answer? ☒ Yes ☐ No

/ has on the right / human

LIST

IMAGES



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

QAnswer About FAQ

PROFILE QUERY EDIT TRAIN EVALUATION UPLOAD QUESTIONS MAPPINGS SPARQL CONFO COMMUNITY

Go

Confidence: 45%

SPARQL LIST DID YOU MEAN DIRECT ANSWER

Is this the right answer? ☐ Yes ☐ No

/ instance of / image
/ has on the left / traffic light
/ has in the center / Boston University

download (7).jpg



Implementation of Yolo and use of semantic web features of Qanswer

images of car in the left Semantic web modelling Go

Confidence :  39 %

Is this the right answer? ☒ Yes ☐ No

Subject Predicate Object

/ has on the left / car

Implementation of an object detection algorithm called YOLO

images.jpg

