COSC 6373: Computer Vision
Homework 13

Object Detection with YOLO

Description

In this assignment, you will apply a YOLOv3 model for object detection on images using Keras. Please follow the steps described in the article [1].

Tasks

The specific steps for this task are:

1. Download and save the pre-trained model weights.
2. Create the YOLOv3 model.
3. Make a prediction on **three** images of your choice (e.g., images of people, animals, objects etc.) and report the model's output.
4. What is the purpose of the non-max suppression?
5. You notice that the non-max suppression of the model is 0.5. Please repeat step 3 using the following values for non-max suppression: (i) 0.3, and (ii) 0.8. What do you observe?

Deadline

Monday 4/3/2023 23:59 PM CST

Submission Guidelines

You need to submit your code and report to GitHub.

1. Create a GitHub account (if you don't have one).
2. Open https://classroom.github.com/a/J4d1K6AJ
3. Select your name and accept the invitation.
4. Submit your working code in GitHub (.py or .ipynb files)
5. Upload any .zip file or folder if your code refers to the paths of those files.
6. **Update the README.md file with instructions on how to run your code.**
7. A pdf of your report (name: COSC6373S23-HW13-ICA-Report-Firstname-Lastname.pdf) with your output and comments.

Grading

1. Code documentation and readability (10%): A brief documentation, describing the most important tasks of each class/module in the source code in your own words. Use of comments, proper indentation, clear notations, and simplicity.
2. Code completeness (80%): Working code with no errors on GitHub or Jupiter Notebook. Including instructions for running your code.
3. Report (10%)

References

1. “Object Detection with YOLOv3 in Keras,” https://machinelearningmastery.com/how-to-perform-object-detection-with-yolov3-in-keras/