Train YOLO to Detect Custom Objects

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Overview

Project progress

- Dataset Hunting
- Door Pictures labeling
- Darknet Training

Challenges

- Installing Softwares
- Computing Power/Time Frame

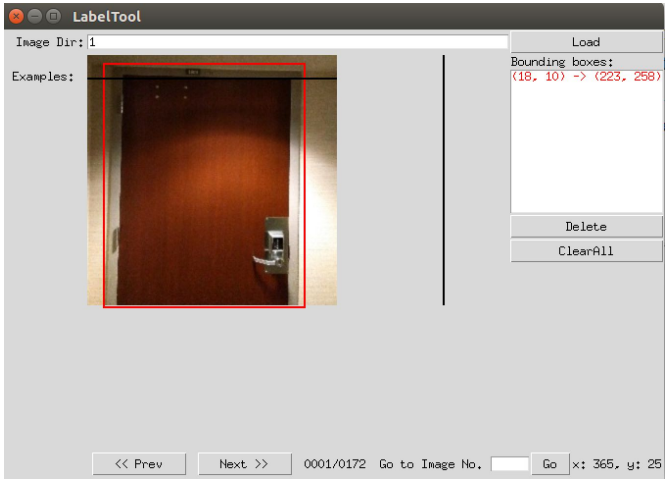
Progress - Dataset Preparing

Accomplishment 1

- Finding door dataset
- Reference: *MCIndoor20000: A fully-labeled image dataset to advance indoor objects detection* by Fereshteh S.Bashiriab
  Eric LaRoseb
  Peggy Peissigb
  Ahmad P. Tafti

Accomplishment 2

- **BBox Label Tool** to annotate the doors in training images



Progress - Preparing Configuration Files:

Accomplishment 1

- Configuration files:
  makefile
  obj.data
  obj.names
  yolo-obj.cfg
- Label Text files:
  train.txt
  test.txt

Accomplishment 2

- Training module

  ./darknet detector train cfg/obj.data cfg/yolo-obj.cfg darknet19_448.conv.23

Challenges

Challenge 1

- Installing Softwares
- Windows/Linux:
  - CMake >= 3.8 for modern CUDA support
  - CUDA 10.0:
  - cuDNN >= 7.0 for CUDA 10.0
  - OpenCV >= 2.4

Challenge 2

- Computing Power/Timeframe
  - Hardware: GPU with CC >= 3.0
  - Training 60 images on Google Colab: 2 hours/epoch

Trials

- 60 images
- Single image
- 3 images

DEMO


door
494
ASSISTIVE LISTENING SYSTEM AVAILABLE
Engineering Conference Room


door
493


door
492
PLEASE KEEP DOOR CLOSED AT ALL TIMES

References

YOLO object detection with OpenCV - Adrian Rosebrock

How to train YOLOv2 to detect custom objects - Nils Tijtgat

MCIndoor20000: A fully-labeled image dataset to advance indoor objects detection