
Deep Learning
Final Project
Object Detection of People,
Animals, Daleks, and Lightsabers
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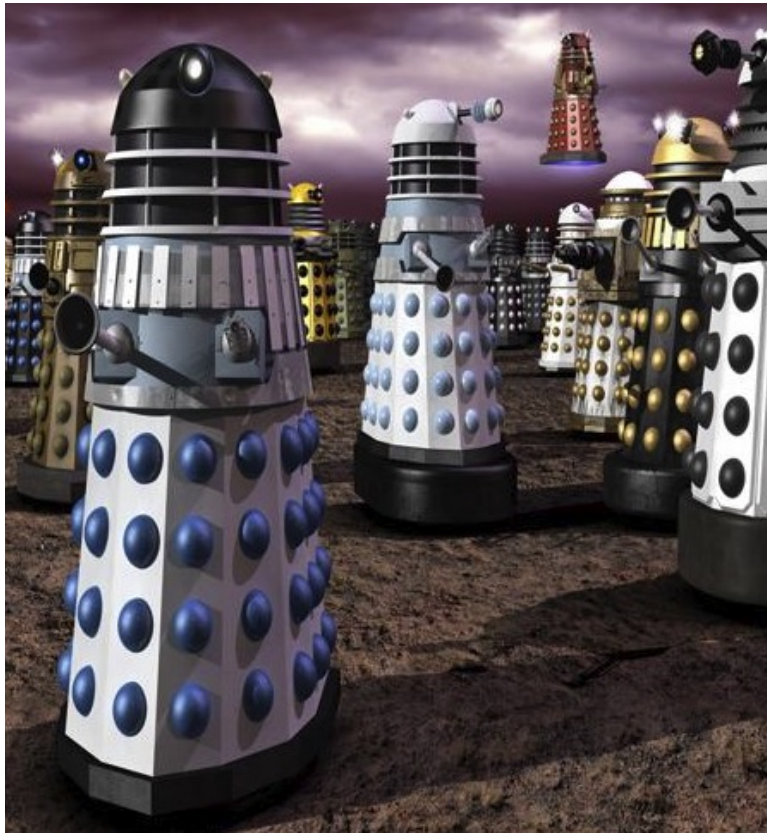
plan
IDEAS
DEADLINE
COLLABORATION
VECTOR
LOGO
LAYOUT
imagination
Passion
COLOUR PALLET
RESEARCH
MOCKUP
GRAPHICS
FONT TYPE
Ad
DISCUSSION
ingenuity
SPACE
NEGATIVE
POSITIVE
TIME MANAGEMENT

Introduction

YOLOv8 model used for multi-class object detection.

Classes: person, dog, cat, dalek, sith lightsaber, other lightsaber.

Includes dataset preparation, training, evaluation, CI/CD.



Examples

- Daleks:
- Lightsabers:

Dataset Overview

Custom and COCO-based data.

YOLO-format annotations.

Balanced structure for train/val/test.

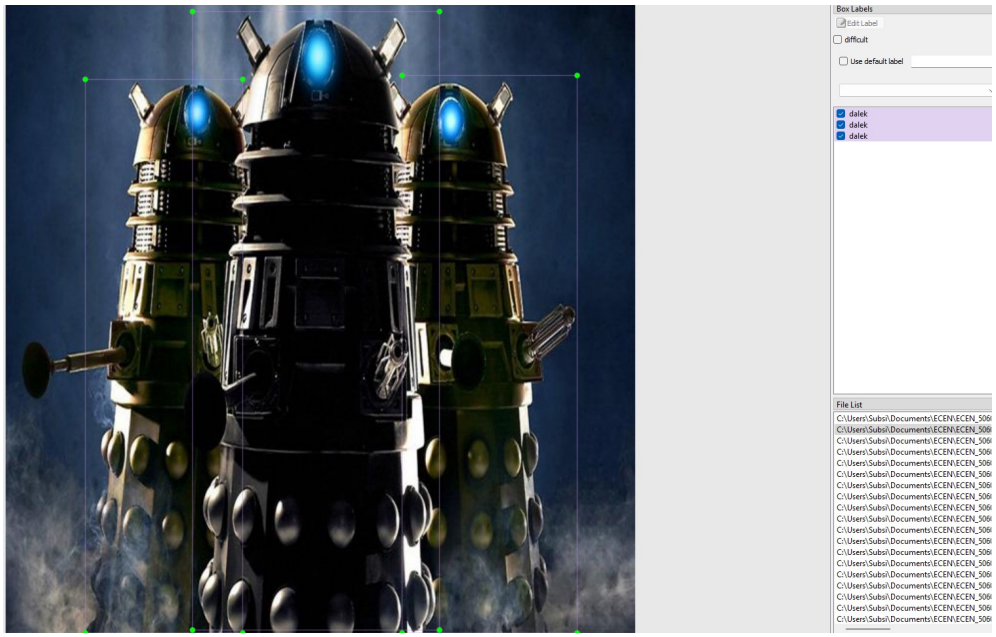
DALEK: 82% PRECISION, 91% RECALL.

PERSON: 68% PRECISION, 66% RECALL.

LIGHTSABER CLASSES: HIGH RECALL, LOWER PRECISION.

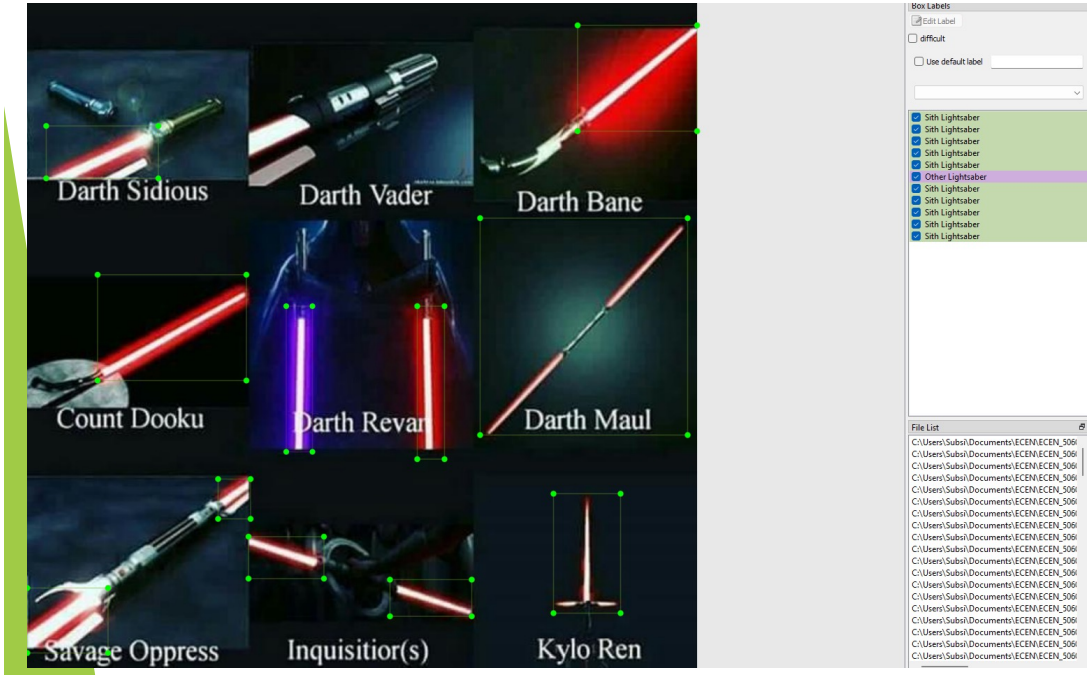
Why 640×640 Image Size?

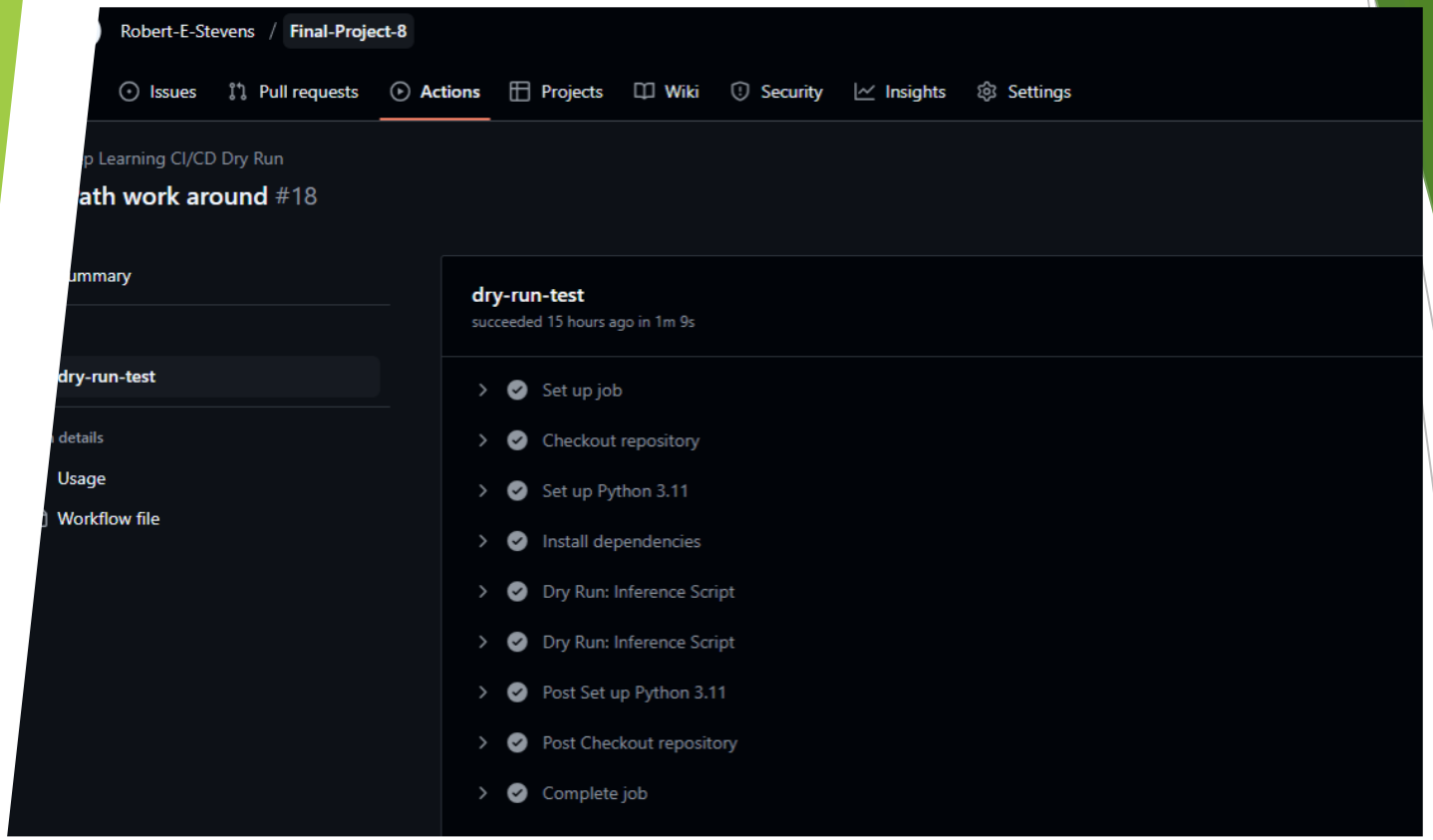
- Reasons for using 640×640 resolution:
- Good balance between accuracy and inference speed.
- Matches YOLOv8 pretrained COCO weights.
- Efficient on RTX 3060 GPU (6GB VRAM).
- Sufficient resolution for Daleks and lightsabers.



Sample Detection Output

- Bounding boxes for Daleks, people, and lightsabers in test video.





CI/CD Workflow Snapshot

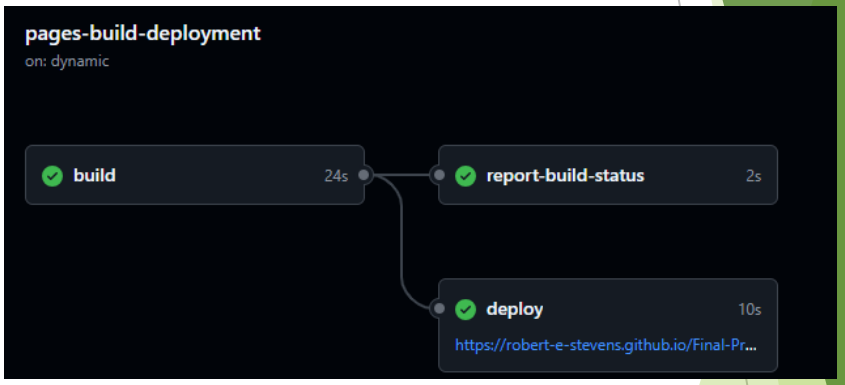
GitHub Actions config for validating training & inference scripts.

📘 Project Documentation Index

Select a file below to view its generated documentation:

- Build Dalek Dataset
- Coco To Yolo Person Cat Dog
- Color Spec Test
- Combined Testing Videos
- Convert Xml To Yolo-Lightsaber
- Convert Xml To Yolo
- Dataset Checker
- Download Yolov8
- Fix Labels
- Train Combined

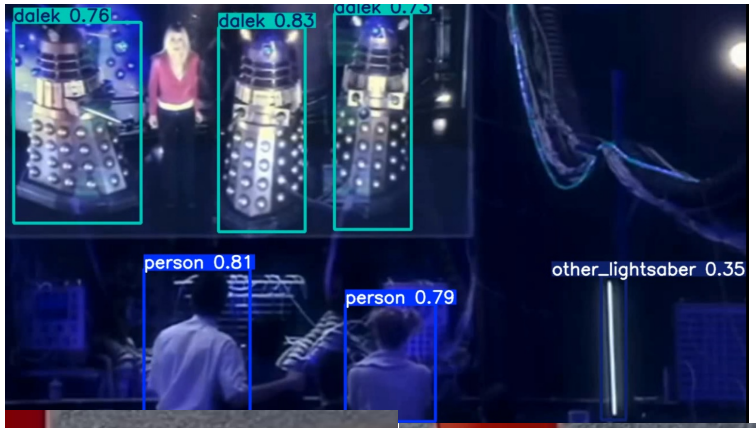
Generated automatically by generate_index_html.py

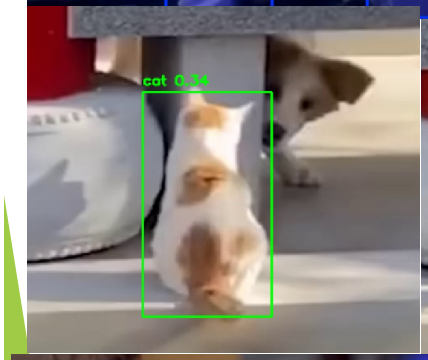


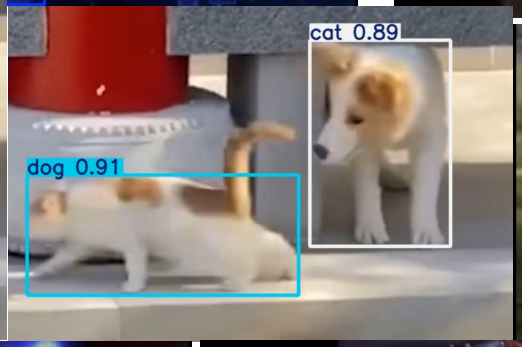
Pydoc

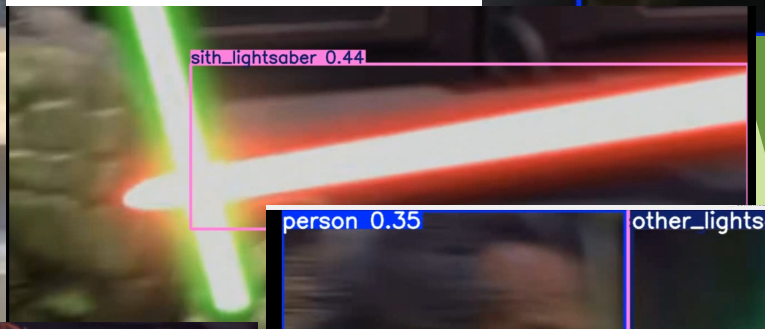
Pydoc for the scripts I used published on github.
https://robert-e-stevens.github.io/Final-Project-8/

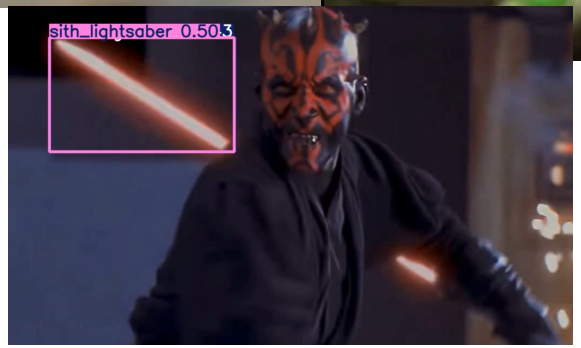
Screenshots











Questions?