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DeepRob Discussion 2

1/28/2025

Session Agenda

- Dr. Du - Neural Networks 2 Finish-up
- Cale - Introduction to YOLO w/ Datasets
- Sydney - RAM Issue Workaround
- P1 Assistance

P1 Status

- Good start; submissions are starting to roll in
- Will Setup Auxiliary OH Friday/Saturday
- GPU Time Constraints
- Don’t forget to save notebook before submitting!

Discussion Learning Objectives

- Blank Slate YOLO Detector Model
  - Session Setup
  - Import/Export
  - Training Constraints
  - YAML Setup
  - Model Size/Parameters

- Preliminary review of results
  - Demonstration Output

Useful Documentation

- https://docs.ultralytics.com/
- https://docs.ultralytics.com/datasets/detect/coco/#dataset-yaml
- https://cocodataset.org/#download

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YAML Inspection

```
# └── datasets
#     └── coco  ← downloads here (20.1 GB)

# Train/val/test sets as 1) dir: path/to/imgs, 2) file: path/to/imgs.tx
path: ../datasets/coco # dataset root dir
train: train2017.txt # train images (relative to 'path') 118287 images
val: val2017.txt # val images (relative to 'path') 5000 images
test: test-dev2017.txt # 20288 of 40670 images, submit to https://compe

# Classes
names:
  0: person
  1: bicycle
  2: car
  3: motorcycle
  4: airplane
  5: bus
  6: train
  7: truck
  8: boat
  9: traffic light
  10: fire hydrant
```

train-nano.yaml

```
1 train: [7117/train]
2 val: [7117/valid]
3
4 nc: 1
5 names: ['Fish']
6
```

RAM Issue - Sydney

P1 Assistance