YOLO Workflow for Custom Object Detection

This guide provides a step-by-step workflow for training a custom YOLO (You Only Look Once) model to detect specific objects of interest. It covers:

1. Preparing a robust dataset by recording videos, extracting frames, and organizing them for training.
2. Annotating images using **LabelImg** in YOLO format.
3. Configuring the Great Lakes HPC environment, including virtual environments and dependencies.
4. Transferring your dataset to the HPC and verifying its structure.
5. Training the model with YOLOv8 using SLURM job scripts.
6. Interpreting training logs and evaluating performance metrics like mAP.
7. Retrieving the trained model and artifacts for local use.
8. Properly closing your HPC session.

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# Phase 0: