

Model Summary

1. Model Details:

- **Model Architecture:** YOLOv8 Nano (yolov8n)
- **Number of Parameters:** 3,013,188
- **Model Size:** 6.2 MB (after optimization)
- **Computational Complexity:** 8.2 GFLOPs
- **Hardware Used:** Tesla T4 (15102MiB VRAM)
- **Framework:** PyTorch (torch-2.5.1+cu121)
- **Training Configuration:**
 - **Epochs:** 4
 - **Batch Size:** 16
 - **Image Size:** 640x640
 - **Optimizer:** AdamW
 - **Pretrained Weights Used:** Yes
 - **Number of Classes:** 12

2. Speed Metrics:

- **Preprocessing Time:** 0.2 ms per image
- **Inference Time:** 2.1 ms per image
- **Postprocessing Time:** 1.7 ms per image
- **Total Inference Throughput:** ~375 images/second

3. Accuracy Metrics (Validation on 3600 images):

- **Precision (P):** 0.499
- **Recall (R):** 0.991
- **mAP@50:** 0.574
- **mAP@50-95:** 0.564
- **F1 Score** = $2 * \text{Precision} * \text{Recall} / (\text{Precision} + \text{Recall}) = 0.997$

4. Training Highlights:

- Training completed in **0.534 hours** (4 epochs).
- Optimized weights saved at `runs/detect/train3`.

DataSet: <https://www.kaggle.com/datasets/koryakinp/fingers>