Hyperparameter logging: SeaDronesSee Maritime Object Detection with YOLOv8-L

Version	Image Size	Tile Size	Batch	Learning Rate	Augmentation	Epochs Completed	Best Epoch	Train Loss (box/cls/dfl)	Val Loss (box/cls/dfl)	mAP50	mAP50-95	Precision	Recall	Key Changes	Performance Notes	Status
v1.0 (Baseline)	640×640	1024×1024	8	0.001 → 0.00001	Default (scale=0.5, mosaic=1.0)	20/20	20	1.134/0.547/1.060	1.348/0.616/1.204	0.9111	0.5871	0.9118	0.8949	Initial training with standard YOLOv8-L configuration	Excellent convergence, stable validation metrics, strong performance on large objects (boats ~90%), moderate on small objects (swimmers ~80%)	Best Performance
v2.0 (Extended)	640×640	1024×1024	8	0.001 → 0.00001	Default (scale=0.5, mosaic=1.0)	29/40 (Early Stop)	20	1.134/0.547/1.060	1.348/0.616/1.204	0.9111	0.5871	0.9118	0.8949	Resume training from v1.0 for additional 20 epochs	Model plateaued, validation metrics identical to v1.0 epoch 20. Early stopping triggered at epoch 29 (patience=5). Confirmed v1.0 had reached optimal performance for 640px resolution.	Discontinued
v3.0 (High-Res)	1024×1024	1024×1024	4	0.001 → 0.00001	High (scale=0.5, mosaic=1.0, copy_paste=0.1)	13/25 (Manual Stop)	8	1.395/0.793/1.298	1.427/0.752/1.380	0.8923	0.5681	0.8884	0.8709	Increased resolution to improve small object detection; reduced batch due to memory constraints	Initially performed well compared to base v1, but later higher resolution led to overfitting (val/cls_loss increased from 0.752→0.818 by epoch 13). Classification loss degradation indicates architecture/dataset mismatch. Manually terminated after 5 epochs of decline.	Fail