

Final Feedback — Bird Classification from Full Images, Segments, and Parts

What's strong

- This is one of the most ambitious and well-engineered projects in the class. You've combined **transfer learning, object detection, segmentation, and part-based modeling** into a cohesive system.
 - Excellent **data pipeline**: from API-based image scraping (iNaturalist, GBIF) to deduplication, augmentation, multi-format storage (CSV/JSON/HDF5), and anatomical segmentation using YOLOv8 + SAM. Very professional.
 - You implemented and compared **three distinct strategies**: full-image classification, semantic segmentation, and part-based (head/body) classification — and complemented each with Grad-CAM and detailed metrics.
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What to highlight in the poster

- **Comparison table (Fig. 15)** summarizing F1, Top-1, Top-3, and AUPRC across all models — it's central to your results.
 - Show **Grad-CAM visualizations** (head vs. body vs. full image) to communicate how each model “sees” the bird — it's intuitive and eye-catching.
 - Include at least one **confusion matrix**, ideally from the full image model, and point out typical confusions (e.g., *Delichon urbicum* vs. *Hirundo rustica*).
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Refinements for report/poster

- Briefly state the **advantage of the Uncertain class** strategy — it adds robustness in real-world deployment when predictions are low-confidence.
 - Emphasize that **part-based classifiers (head/body)** may complement each other, even when individually weaker than the full-image model — ensemble potential is high.
 - Consider stating in a sentence why EfficientNet-V2-S outperformed B0 in your setup (likely due to better feature depth on whole-image context).
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No need to change

- Don't try to extend to real-field test images now — save that for the final test. The current validation and augmentations are enough for your poster.
 - Avoid re-running YOLO or SAM at this stage. Instead, use what you have and focus on showing insights.
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Optional enhancement

- If you can, show **ensemble results** in the final poster — e.g., majority vote or average logits from full image + head + body classifiers. Even a small gain would be compelling.