Guardians of Wild: Artificial Intelligence for Wildlife Conservation

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Abstract: *A growing number of animal species are in danger of being extinct or becoming endangered, making wildlife conservation an essential global responsibility. Cutting edge methods in computer vision, such as deep learning models for object detection, provide exciting new possibilities for wildlife preservation and monitoring. The most recent research on using cutting-edge object identification algorithms, particularly YOLOv8, for animal conservation initiatives is reviewed in this review paper. We review important works that use deep learning to identify poaching and classify animal species. We analyse deep learning systems designed for wildlife conservation, including their performance benchmarks, operational deployments, training approaches, and algorithm design. The review outlines the key takeaways from the body of research and suggests future research avenues to address the challenging issue of scaling AI to stop the loss of biodiversity and protect threatened species around the world.*

Keywords: Object Detection, Poaching Detection, Deep Learning, Convolutional Neural Network, YOLOv8, Bounding Box Detection

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