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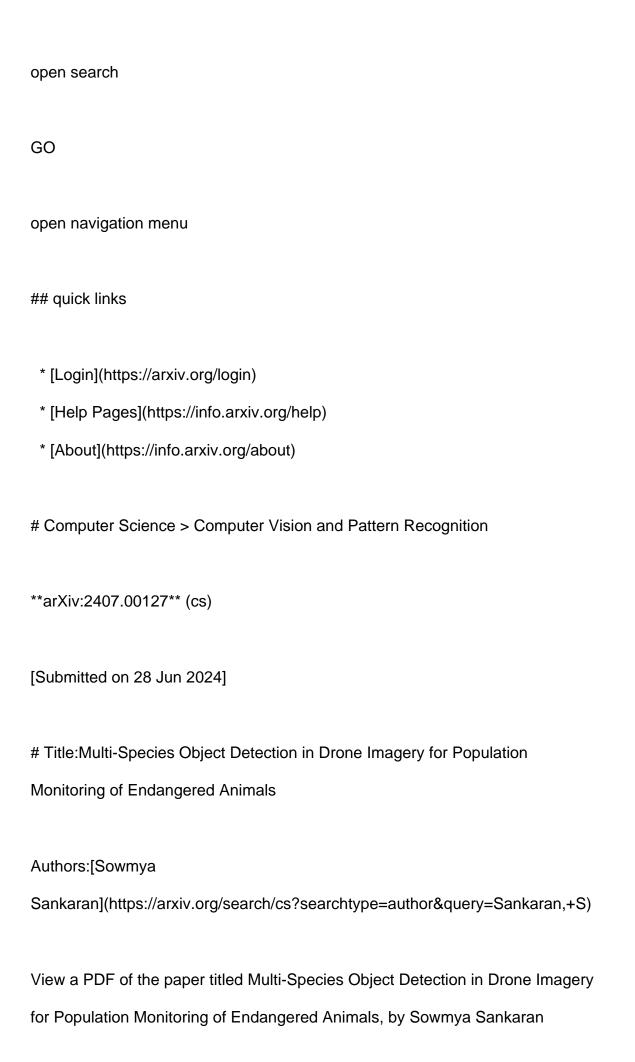
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- > Abstract: Animal populations worldwide are rapidly declining, and a
- > technology that can accurately count endangered species could be vital for
- > monitoring population changes over several years. This research focused on
- > fine-tuning object detection models for drone images to create accurate
- > counts of animal species. Hundreds of images taken using a drone and large,
- > openly available drone-image datasets were used to fine-tune machine
- > learning models with the baseline YOLOv8 architecture. We trained 30
- > different models, with the largest having 43.7 million parameters and 365
- > layers, and used hyperparameter tuning and data augmentation techniques to
- > improve accuracy. While the state-of-the-art YOLOv8 baseline had only 0.7%
- > accuracy on a dataset of safari animals, our models had 95% accuracy on the
- > same dataset. Finally, we deployed the models on the Jetson Orin Nano for
- > demonstration of low-power real-time species detection for easy inference on
- > drones.

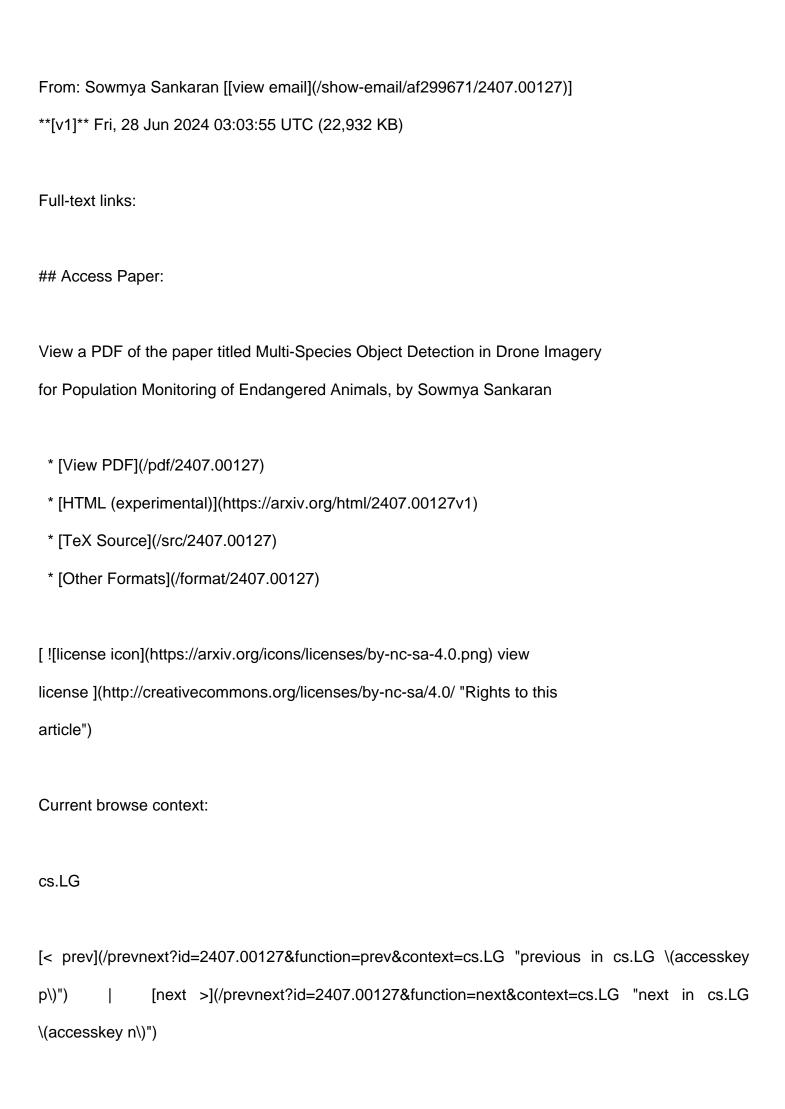
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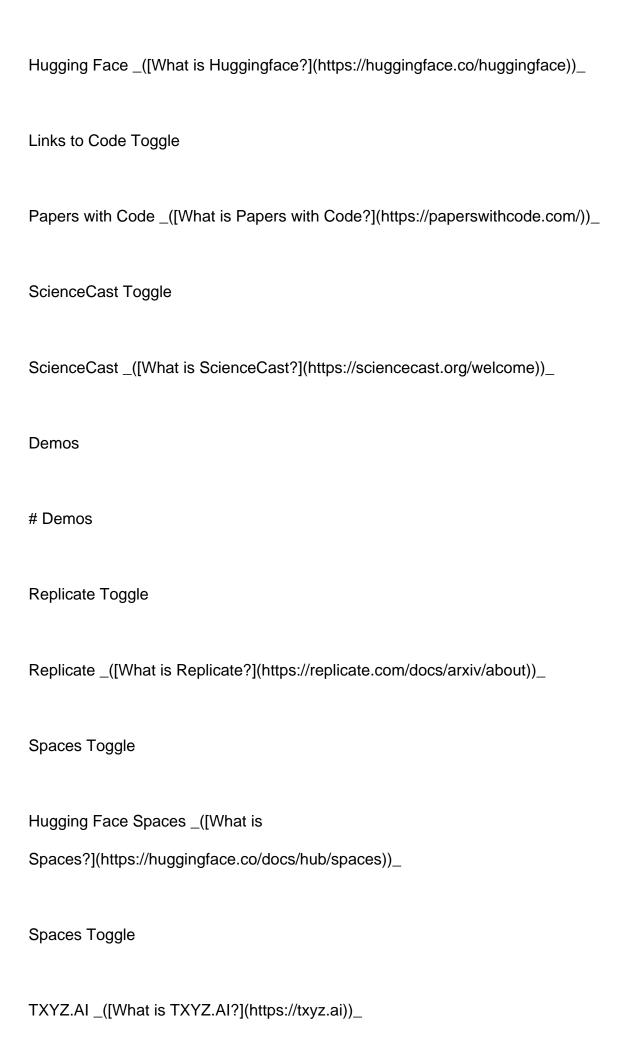
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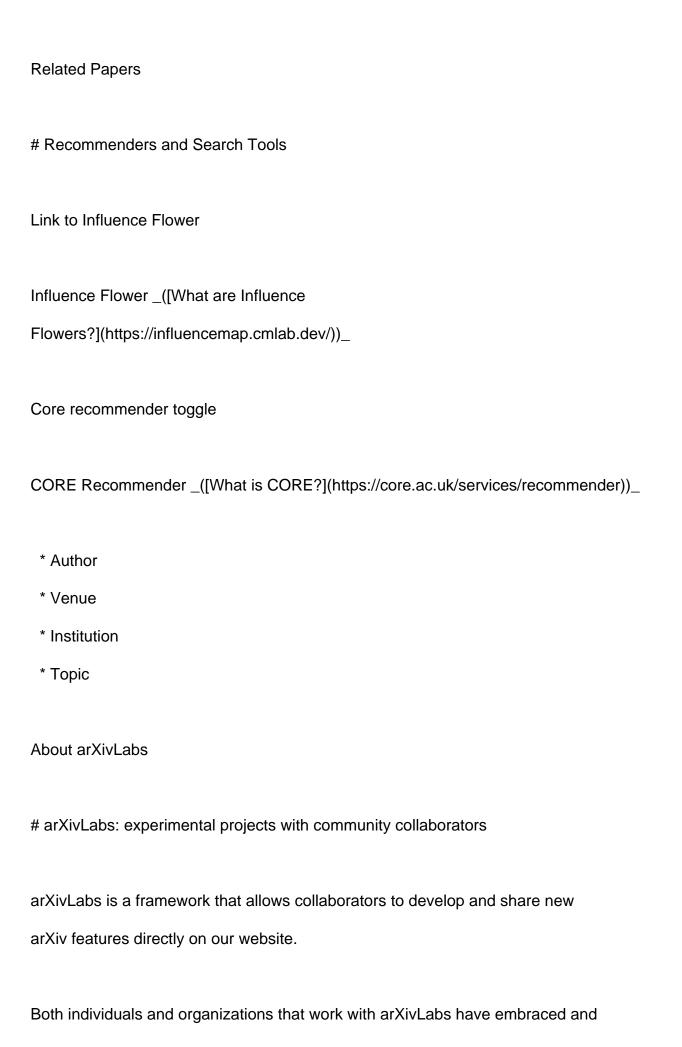


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