Data sheet

This data description document aims to provide users with comprehensive and in-depth information about the dataset, ensuring that users fully understand the concept behind the dataset's construction, its content, how to use it, and its potential limitations. We have referenced the standard dataset documentation framework and covered the following core aspects in detail.

Motivation & Intended Use

Wildlife2024 aims to provide researchers with a comprehensive and challenging platform for developing and evaluating wildlife visual analysis algorithms. Our goal is to advance the understanding of animal behavior, enhance wildlife conservation technologies, and promote the application of computer vision in ecological studies.

The dataset comprises video clips of diverse wildlife species captured across multiple environments, encompassing varying lighting conditions, occlusion scenarios, and animal behaviors.

We believe Wildlife2024 will serve as a pivotal resource for advancing research in related fields.

Dataset Composition

Our Wildlife2024 dataset comprises:

- **Training dataset**: Contains 1,450 sequences with over 5.1 million total frames.
- **Testing dataset**: Contains 110 sequences with over 100,000 total frames.
- **Animal species**: The dataset covers 8 animal classes: Birds, Fish, Amphibians, Mollusks, Mammals, Arthropods, Reptiles, and Coelenterates.
- **Wild environments**: The dataset encompasses 10 wild environments types: grasslands, forests, freshwater systems, oceans, deserts, wetlands, mountainous regions, polar regions, caves, and meadows.
- **Challenge attributes**: The dataset encompasses 13 challenge attributes: illumination variations (IV), out-of-plane rotations (OPR), in-plane rotations (IPR), deformation (DEF), fast motion (FM), scale variations (SV), camera motion (CM), out-of-view (OV), partial occlusion (POC), full occlusion (FOC), low resolution (LR), similar objects (SO), and motion blur (MB).

Collection & Annotation Process

- **Data source：** YouTube、BiliBili
- **Raw Data License：** Creative Commons license
- **Data collection rules:** Before collecting videos, we determine the range of animal species and environmental conditions. Each member is responsible for one species and collects videos related to it. The initial raw videos are collected and processed to ensure that the sequence contains at least one wild animal. Each video is classified according to animal species and environmental conditions.
- **Test set annotation:** When annotating, annotators manually draw or edit the bounding boxes of selected annotation objects in each frame to make them the most compact upright (axis-aligned) bounding boxes that enclose any visible parts of the target objects. The format of the bounding boxes is [x, y, width, height]. If the target object is not present in the frame (whether completely occluded or out of view), the label from the last frame before the target was completely occluded or moved out of view is used as its label.

We follow LaSOT's strict annotation guidelines to ensure transparency, consistency, and accuracy in the annotation process. Our annotation team is professionally trained and undergoes regular quality control and review.

Usage Guide

- **Training set:** You can download our training set Wildlife2024-train via https://pan.quark.cn/s/6e57db50f112.
- **Test set:** You can download our test set Wildlife2024-test via https://pan.quark.cn/s/4bffd8e60b77.
- **Other information:** For more information about the dataset, please visit the official Wildlife2024 homepage at: https://hgg12.github.io/Wildlife2024.github.io/.

Limitations, Biases, and Ethical Considerations

We sincerely discuss the current limitations of the dataset. For example, this dataset primarily focuses on species coverage within the following categories: Birds, Fish, Amphibians, Mollusks, Mammals, Arthropods, Reptiles, and Coelenterates, and may not fully represent the distribution of all species. In terms of geographical coverage, the

dataset primarily originates from grasslands, forests, freshwater, oceans, deserts, wetlands, mountainous regions, polar regions, caves, and meadows, which may introduce geographical biases. We encourage users to fully consider these limitations when using the dataset.

During the construction of the dataset, we strictly adhered to ethical guidelines, including:

- **Privacy protection:** All data has been anonymized to prevent the disclosure of personal privacy information.
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- **Copyright compliance:** All data has been legally licensed to ensure copyright compliance.
- **Avoidance of harmful content:** We review data content to avoid including any discriminatory, violent, or offensive content.

We are committed to improving the fairness and representativeness of the dataset and will strive to address these limitations in future versions.

License

We hope this data sheet provides you with clear and comprehensive guidance. If you have any questions or suggestions, please feel free to contact us at any time.

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