Problem Description: Labels hours of video data in minutes

Detecting/cataloging animals

Challenges
- Large background nuisances
- Mimicry
- Low resolution objects of interest
- Unknown categories

Approach: Enforce spatial-temporal consistency and Categorize “interesting” objects based on multi-view features

Proposed Solution: Automatically detect and cluster objects to reduce manual labeling burden

Introduction: Detect and categorize birds that appear at feeders

Use imagers to measure phenomena
- Construct a procedure using imagers as sensors
  Use state-of-the-art computer vision, image processing, and statistical learning algorithms to model the target signal using domain relevant features. Potentially acquire training data from representative laboratory experiments.
- Collapse hours of video into summary clips
  Use intrinsic properties of a particular process instantiation to remove redundancy. These properties will take the form of visual cues or other, more easily deployed, traditional sensors.

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Present most “interesting” clips to user

Discover:
- monitoring the changes in bird species in a specific region
- when are flowers blooming
- capturing feeding habits
- how the dog keeps himself/herself busy when away from home
- what pesky animal keeps knocking over the garbage
- who’s eating all the apples

System Diagram

[Diagram showing the system flow from User Interface to Label Clusters to View Clips]

Label Clusters

[Visual representation of label clusters]

View Clips

[Visual representation of view clips]

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