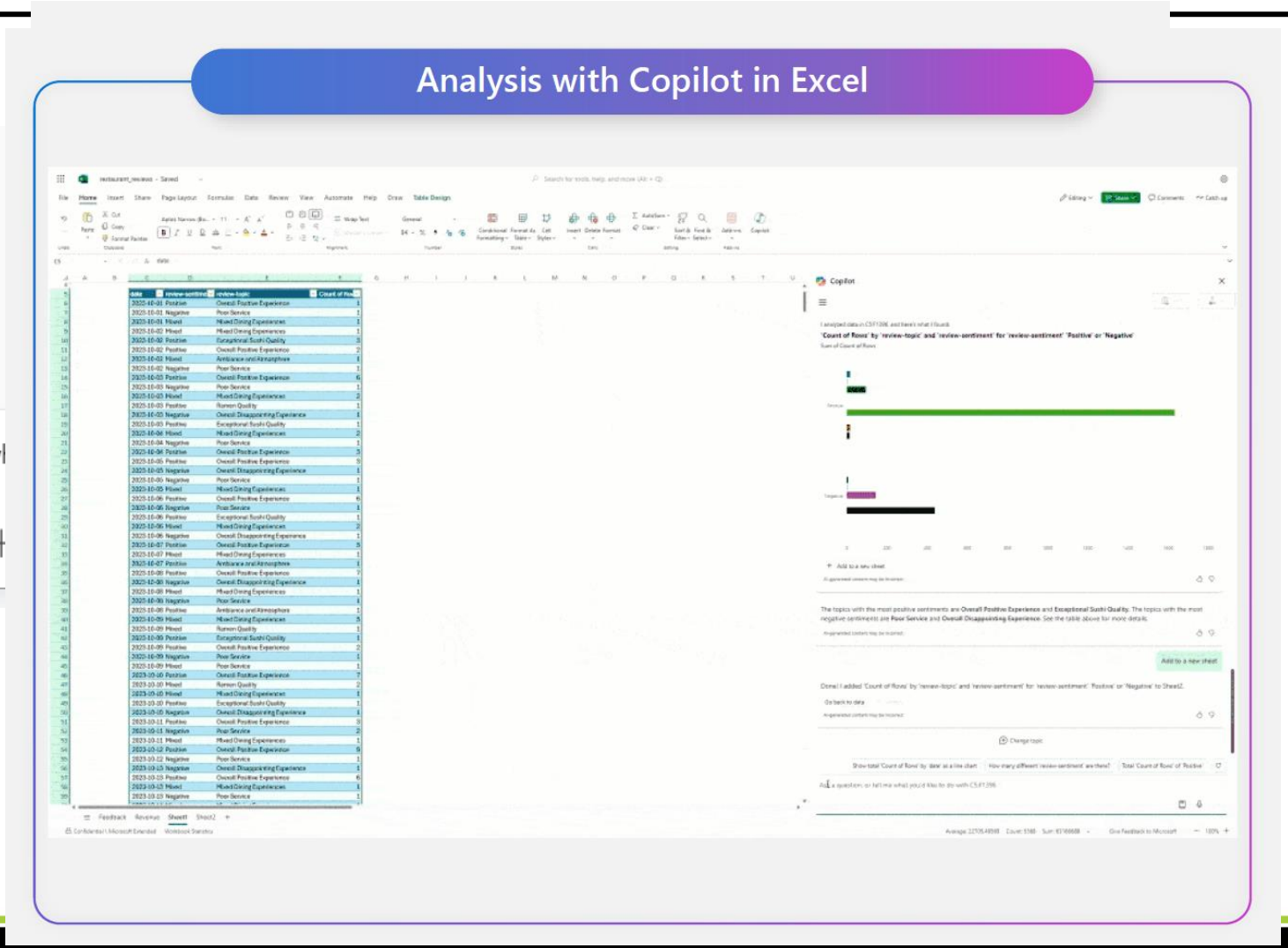
Your Time Your Place

® CLEVELAND METROPARKS

AI at Work: Innovation, Impact, & Intelligence

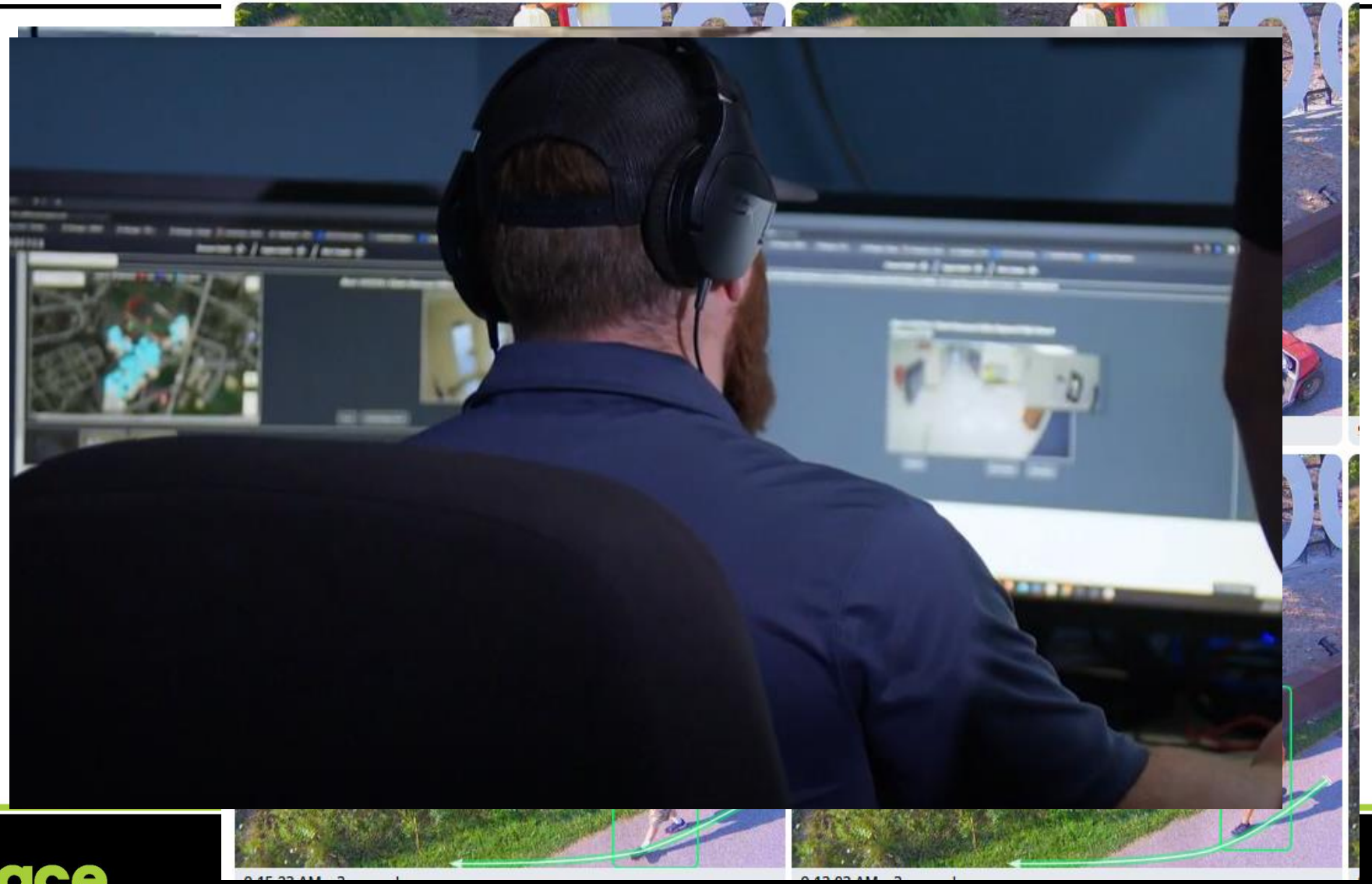
AI at Cleveland Metroparks

- Business Functions
  - Microsoft Copilot
  - ChatGPT
- Chatbots
- Brainstorming
- Routine Tasks
- Comparison/Ranking



Camera Detection & ZeroEyes

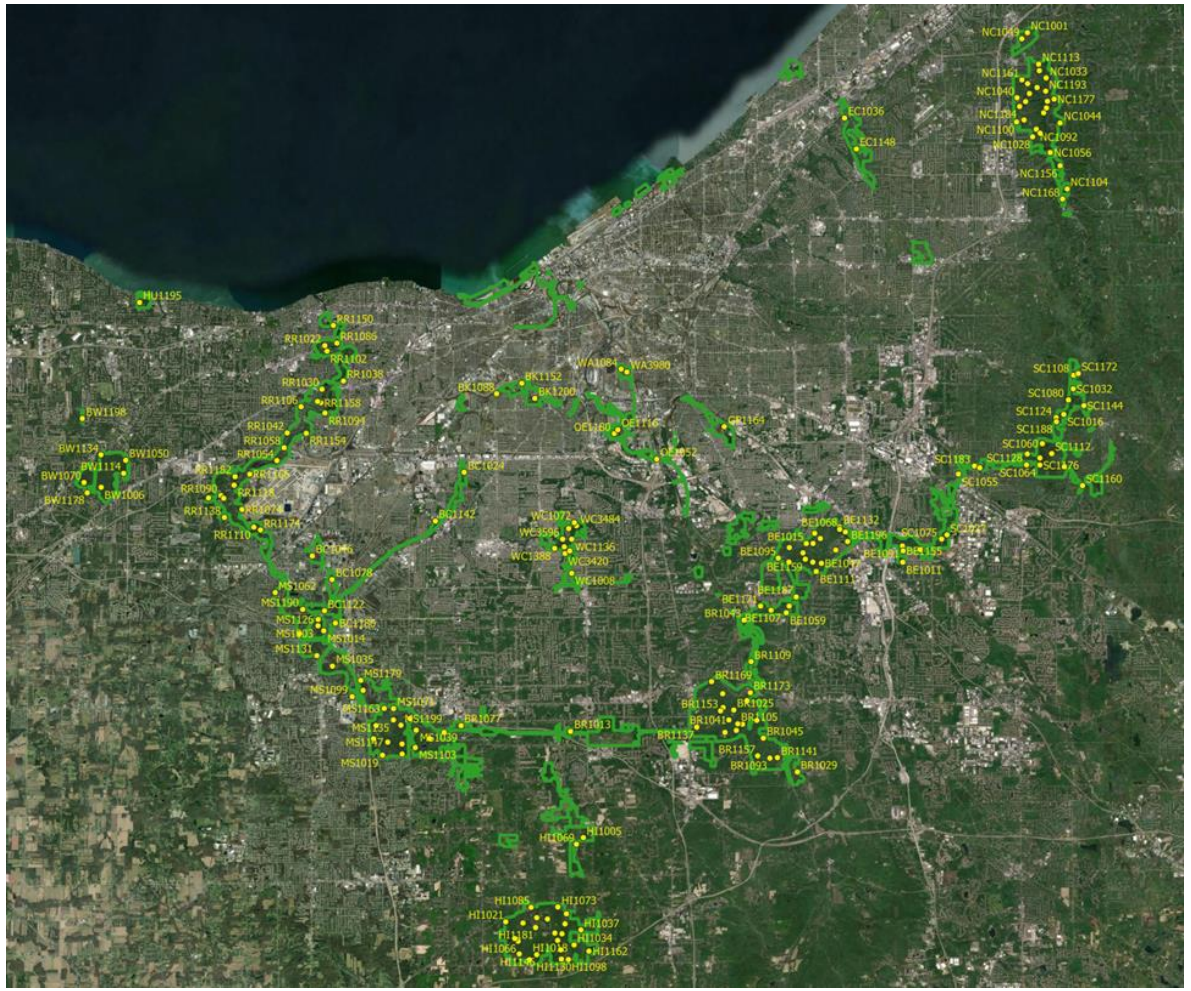
- Cameras:
  - Smart Search
  - Motion Detection
- ZeroEyes
  - Firearm Detection



Other Uses

- Animation
  - Veo (Gemini)
- Digital Workers
  - Call Centers

Natural Resources wildlife monitoring



FOCUS ON WILDLIFE

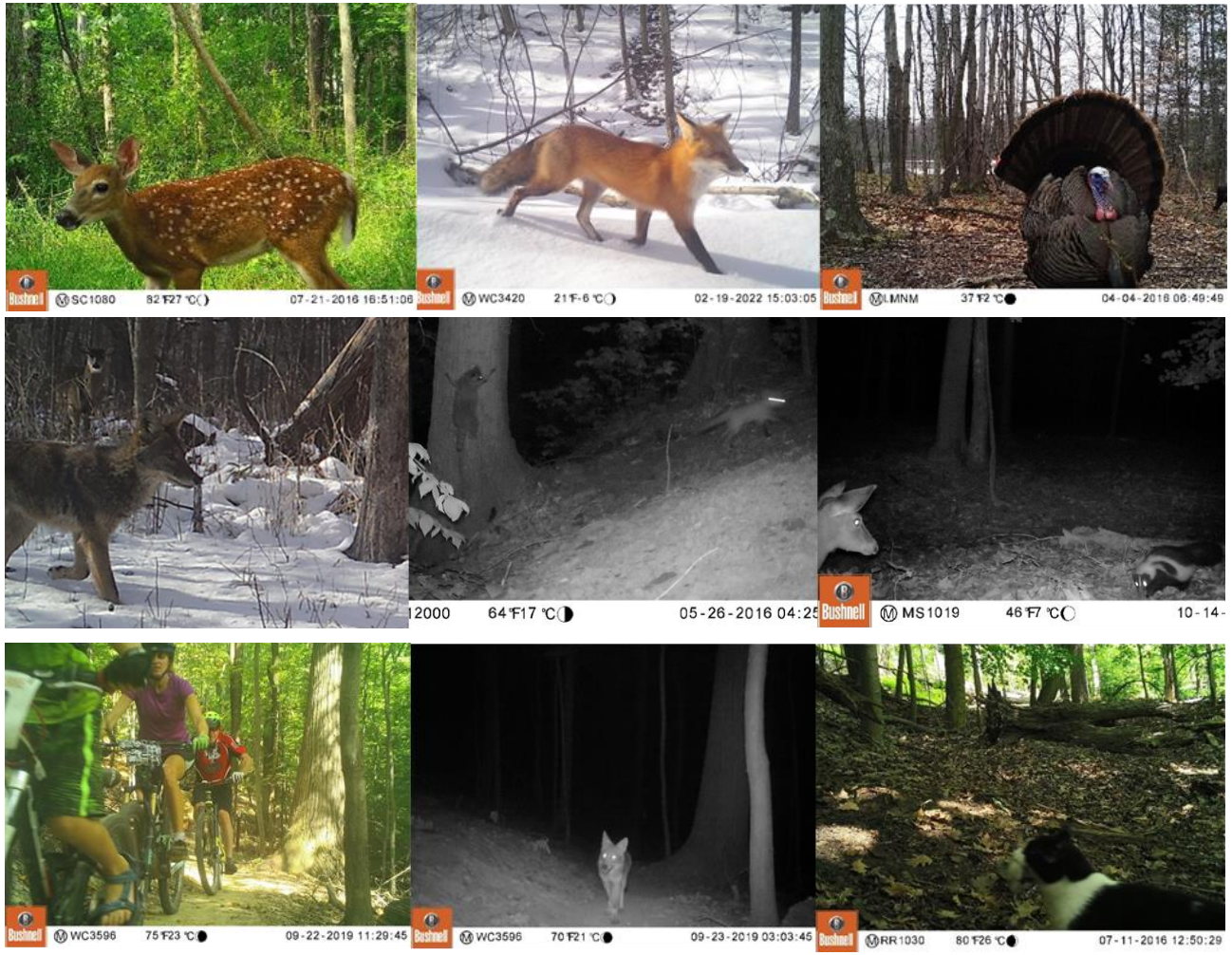
Discover wildlife in Cleveland Metroparks.

Wildlife camera monitoring

Inventory wildlife

Understand wildlife interactions & relationships

Understand relationships with park users & pets



Publications and partnerships

ECOGRAPHY

Research

At what spatial scale(s) do mammals respond to urbanization?

Remington J. Moll, Jonathon D. Cepek, Patrick D. Lorch, Patricia M. Dennis, Terry Robison and Robert A. Montgomery

Humans and urban development mediate the sympatry of competing carnivores

Remington J. Moll[1] · Jonathon D. Cepek[2] · Patrick D. Lorch[3] · Patricia M. Dennis[4,5] · Terry Robison[3] · Joshua J. Millspaugh[6] · Robert A. Montgomery[1]

Science Advances

Current Issue | First release papers | Archive | About

HOME > SCIENCE ADVANCES > VOL. 11, NO. 9 > WHEN THE WILD THINGS ARE: DEFINING MAMMALIAN DIEL ACTIVITY AND PLASTICITY

RESEARCH ARTICLE | ECOLOGY

When the wild things are: Defining mammalian diel activity and plasticity

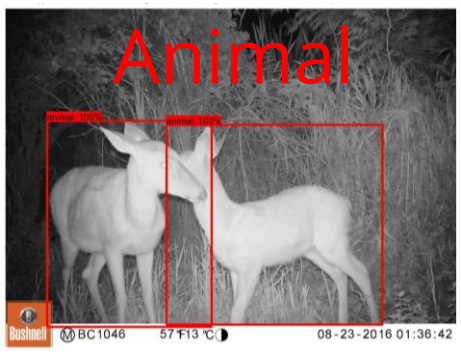
MegaDetector = image categorization

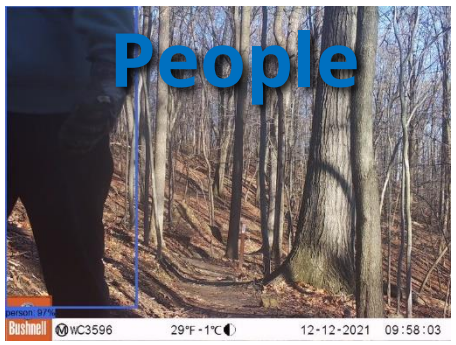
MegaDetector

...helping conservation biologists spend less time doing boring things with camera trap images.

- AI model that identifies:
  - animals
  - vehicles
  - people
- Increases image processing speed by identifying "empty" images.

50-70% Empty



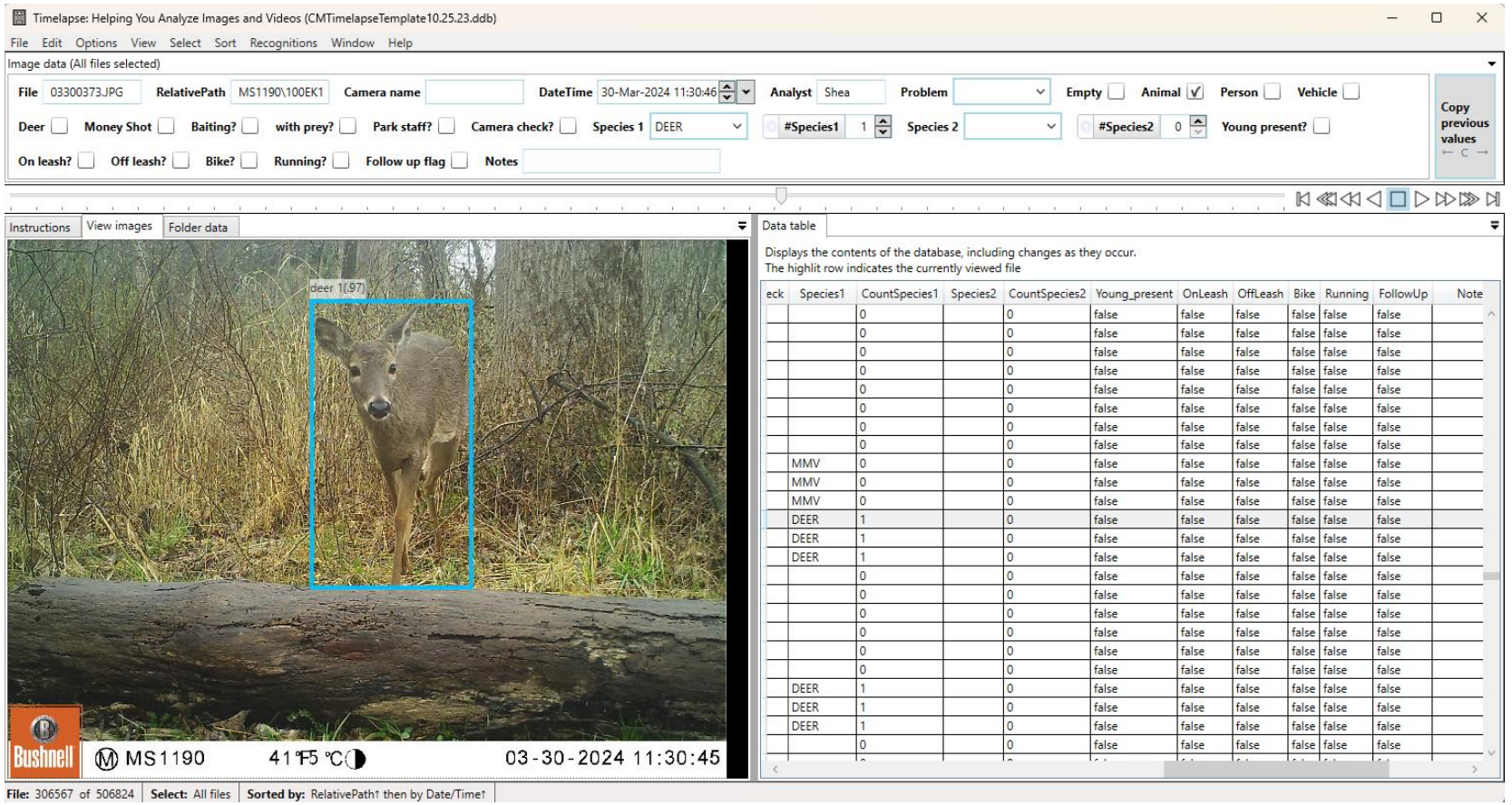


https://github.com/agentmorris/MegaDetector

Timelapse (program) = species identification

Timelapse
from camera trap images to data

https://timelapse.ucalgary.ca/



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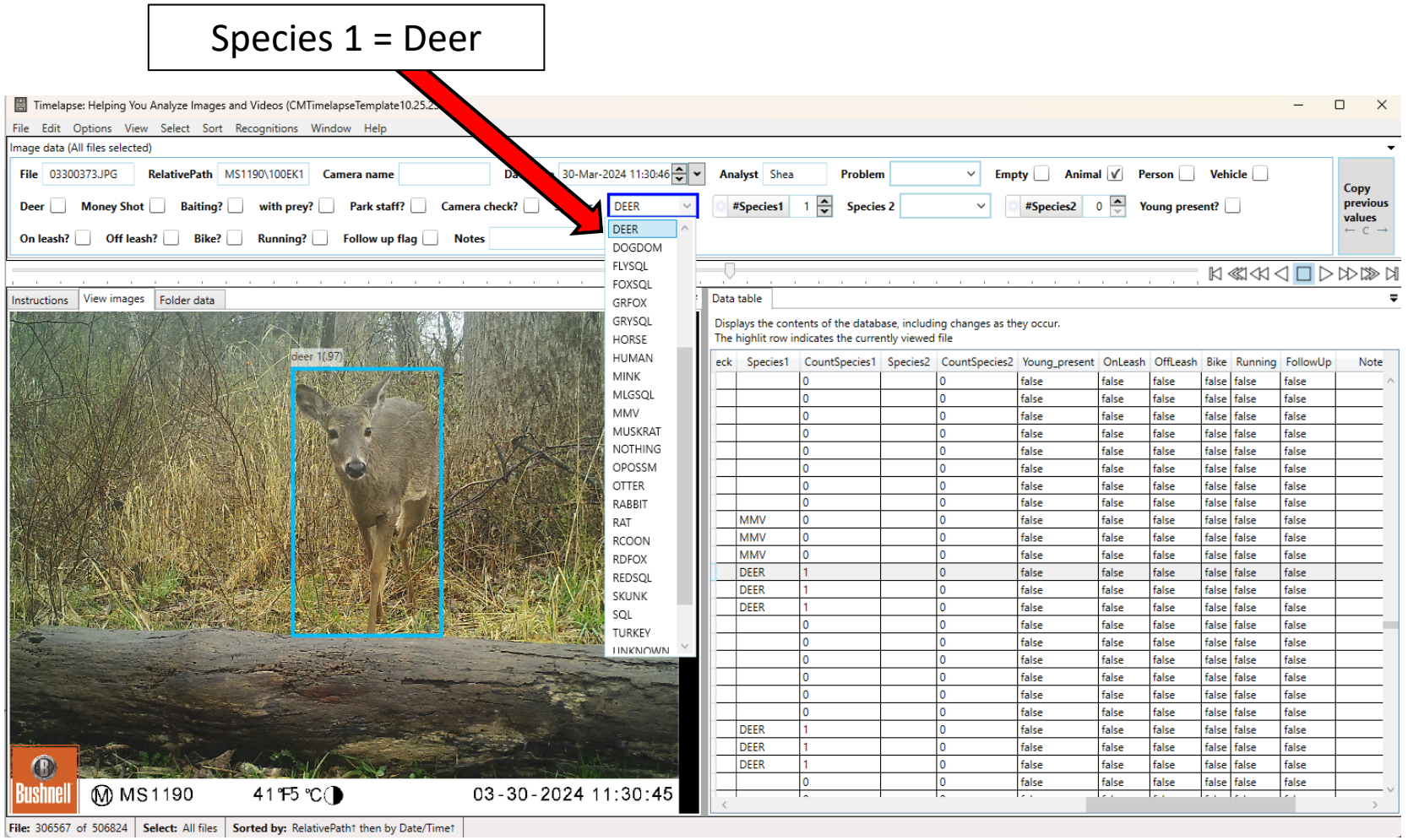
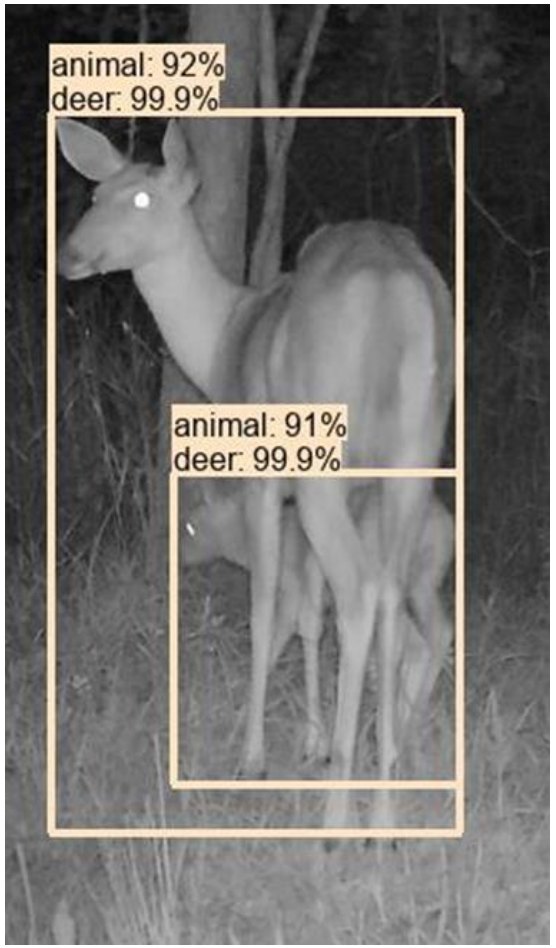
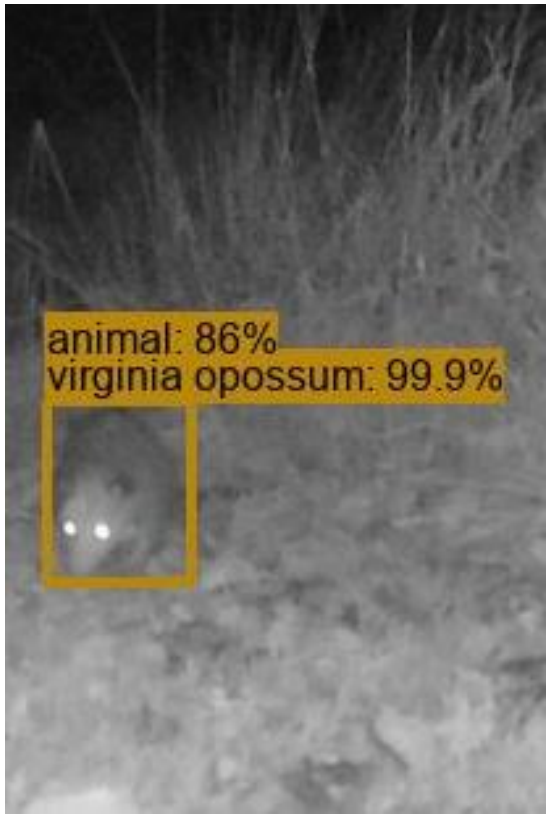
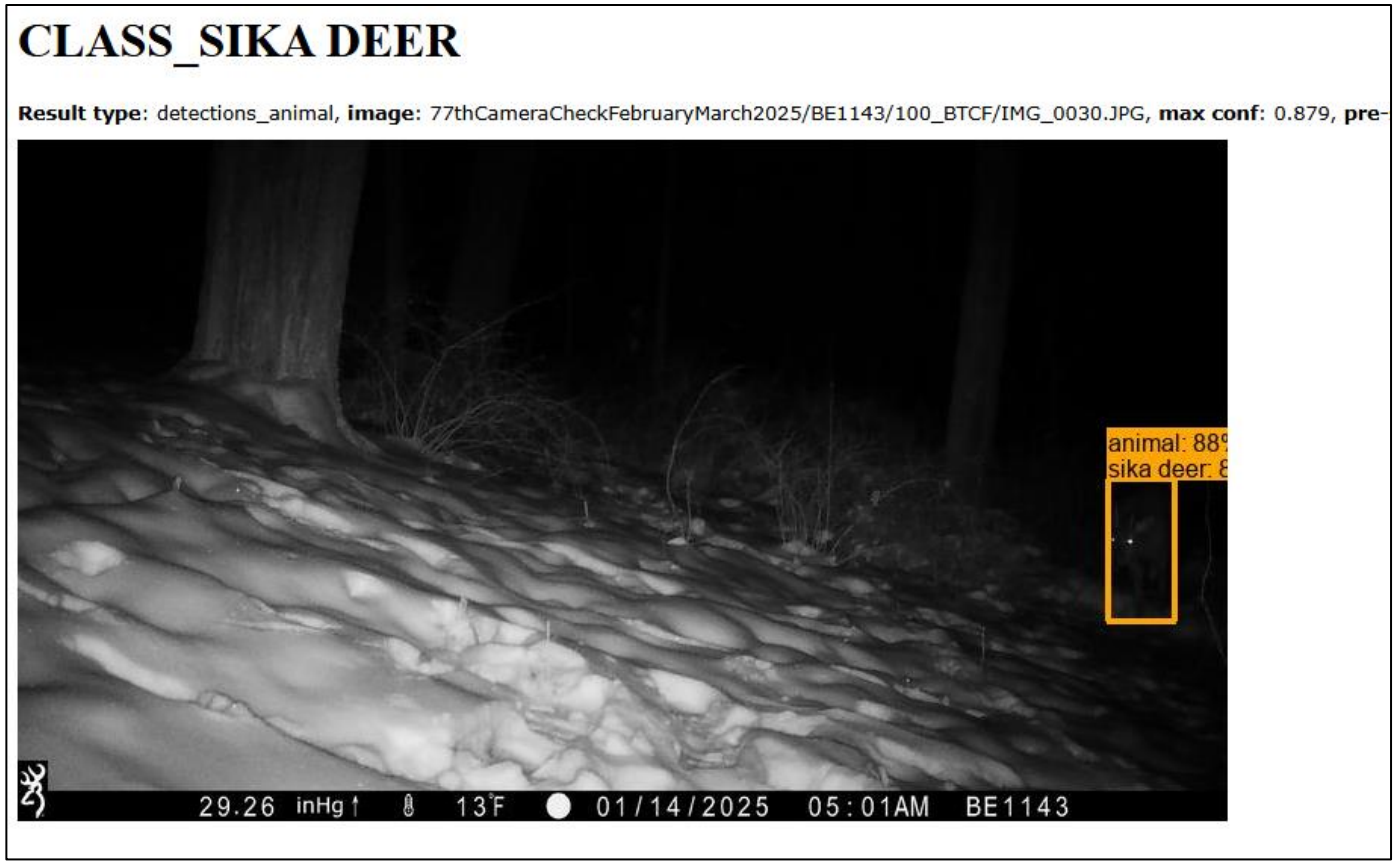


Megadetector & Superclassifier



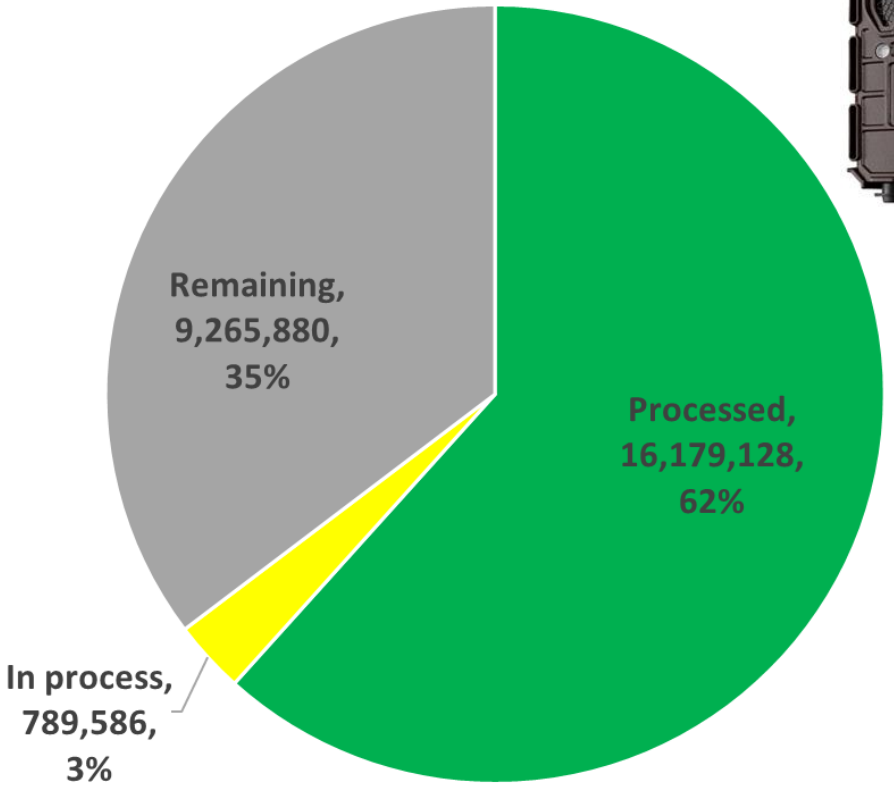
Megadetector & ~~Superclassifier~~SpeciesNet





Speeding up image processing

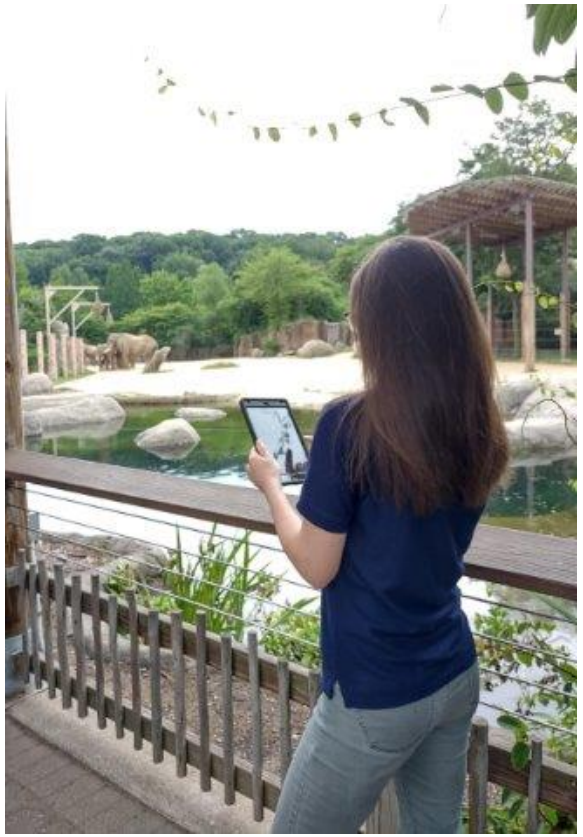
26,234,594 million images



WILDLIFE ACOUSTICS

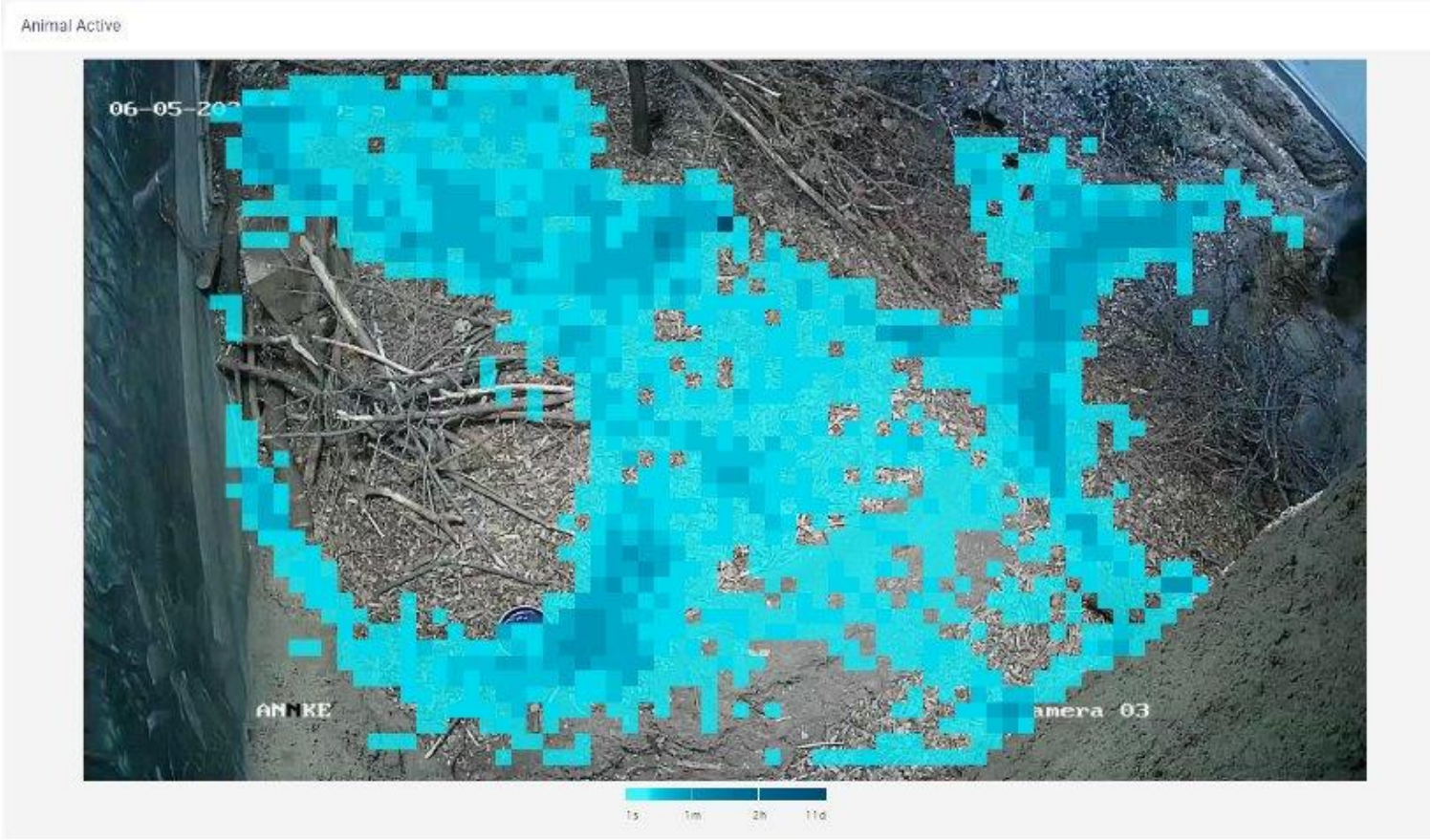
Zoo – Animal Behavior

- Behavior research → Improved animal wellbeing



AI-based Learning Programs → Automatic Behavior Data Collection?

- Initial test of AI program using red-rumped agouti
  - Location
  - Activity level
  - Proximity/interactions



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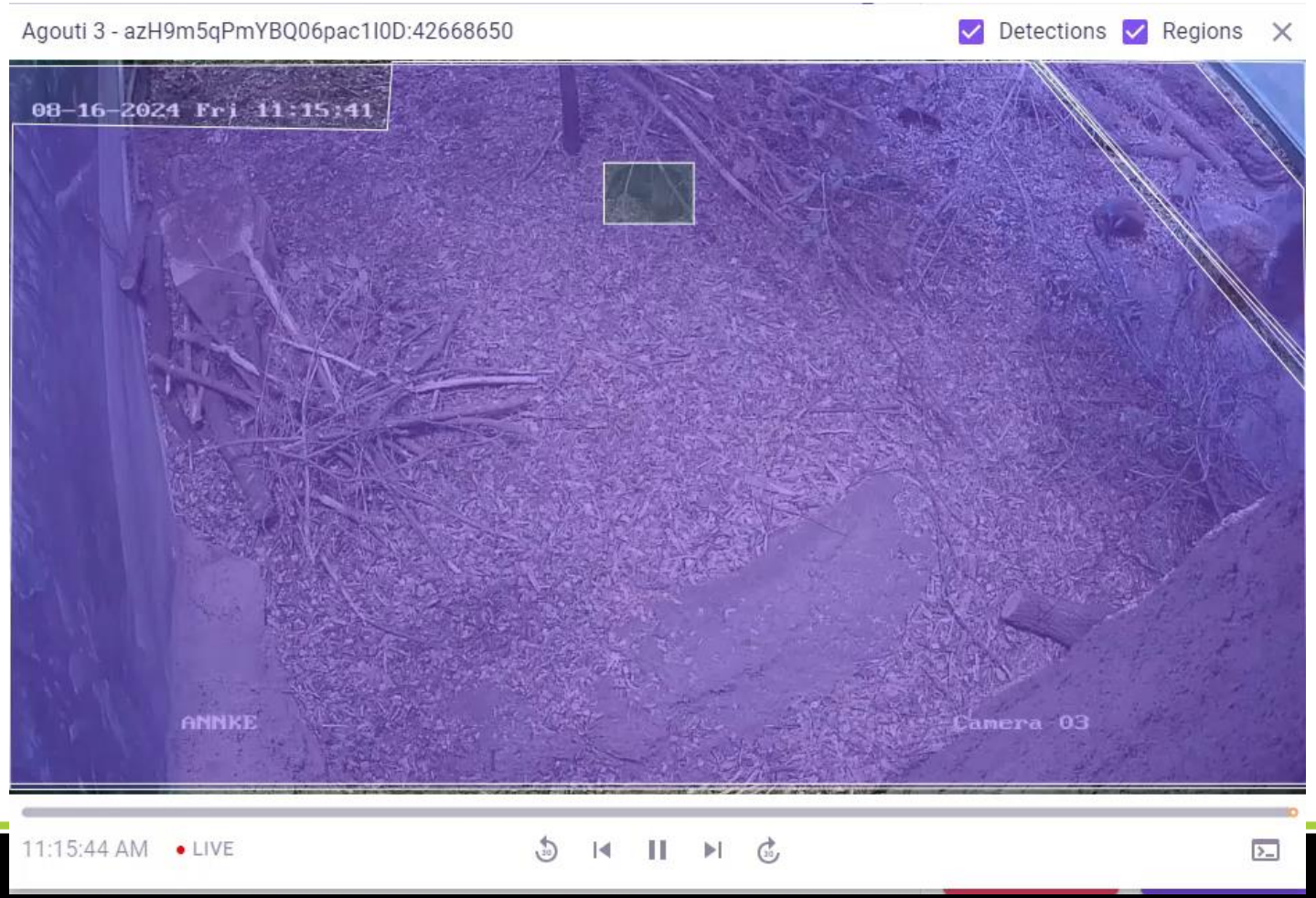

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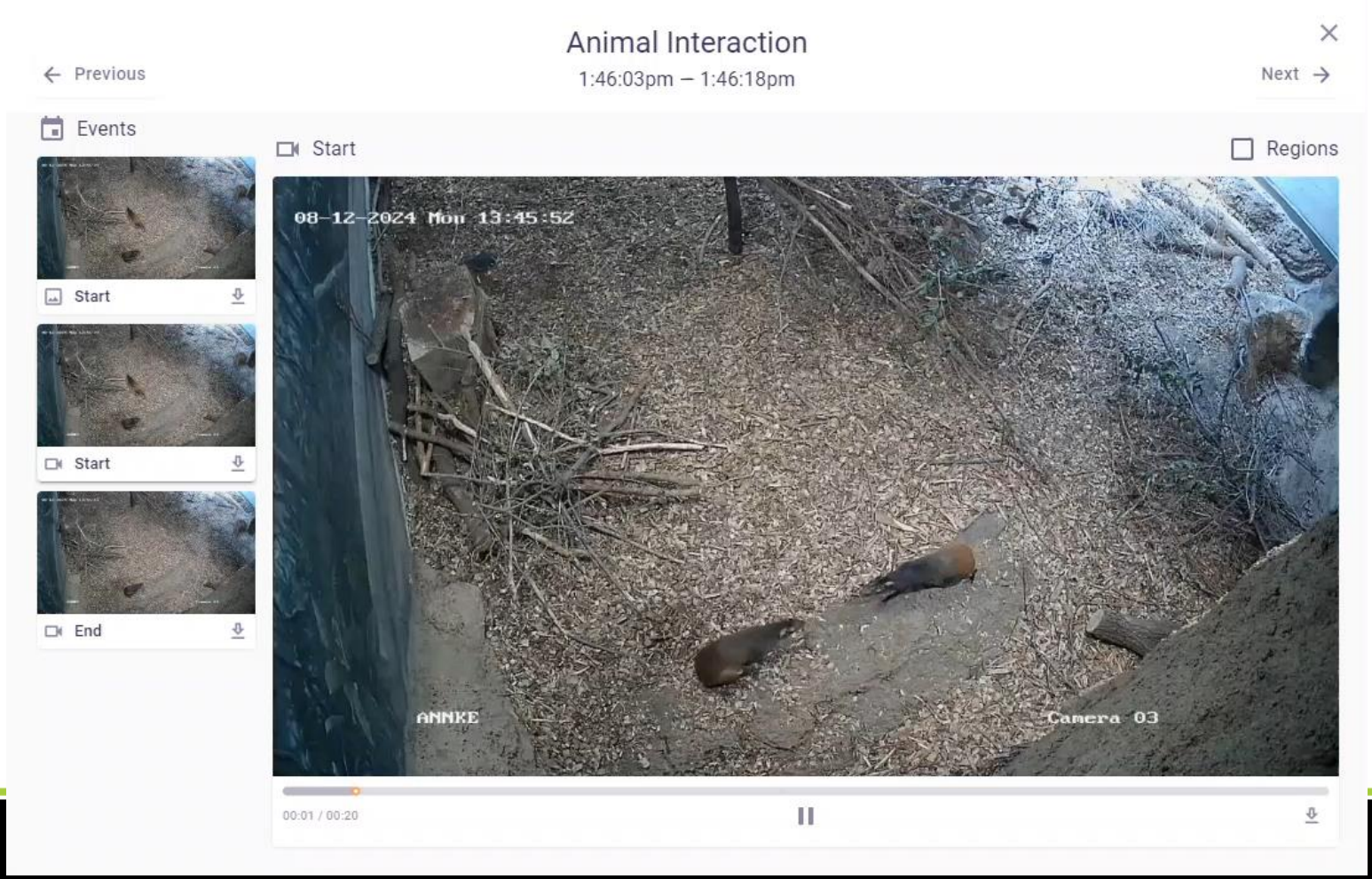

Continued Exploration

- Application to replace high person time investment for ongoing monitoring programs
  - Expand data collection beyond Zoo open hours
- Detection and quantification of specific behaviors to answer questions and improve management
  - Compared to traditional, human-based data collection methods
- Detect distinct events
  - Births, falls, altercations, etc.
  - Trigger alerts that contact Animal Care for immediate responses

Your Time Your Place

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Questions?