Centre for Artificial Intelligence and Digital Ethics

ADM +S

What's AI got to do with animals?

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RSPCA Animal Welfare Seminar 2026

WHAT IS AI?

Software that approximates human (and animal) thinking and behaviours....

Learning, reasoning, perceiving, problem-solving, decision-making, creating

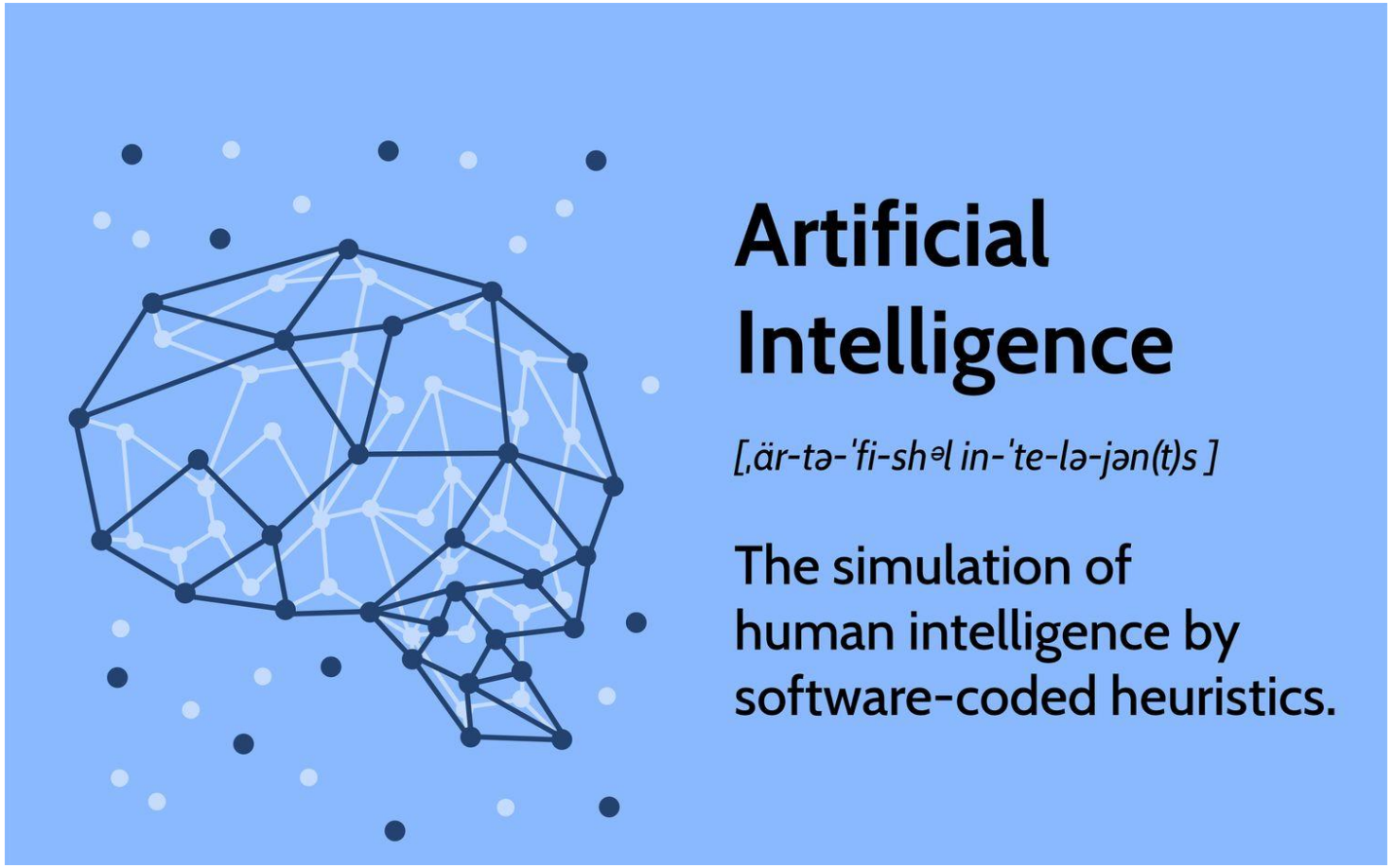


Image source: https://www.investopedia.com/terms/a/artificial-intelligence-ai.asp

MODERN AI

- Rule based
- Machine learning
  - Deep neural networks
  - Trained on big data
  - Pattern recognition
  - Non-transparent decisions, predictions etc.

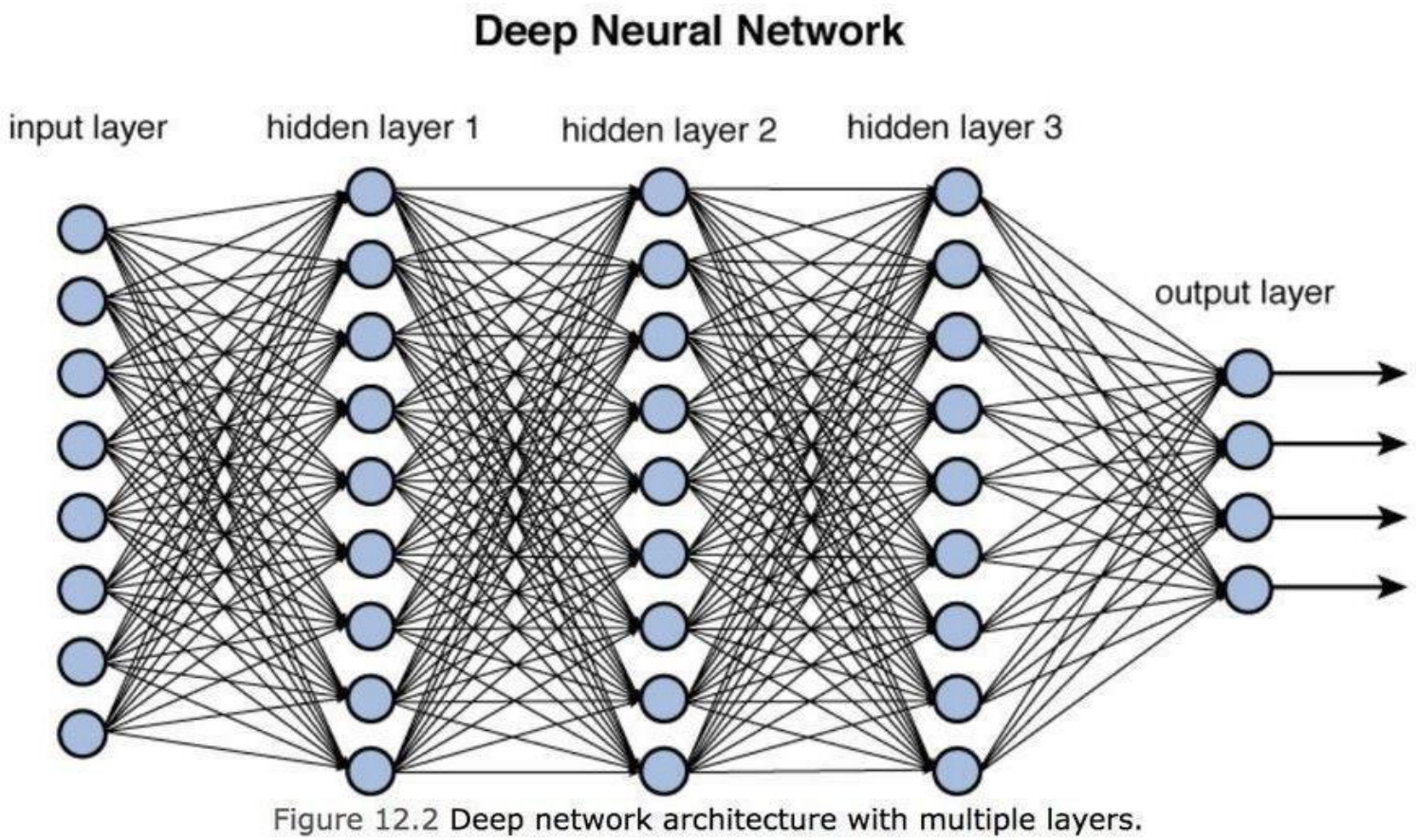


Figure 12.2 Deep network architecture with multiple layers.

Image source: https://medium.com/data-science/training-deep-neural-networks-9fdb1964b964

COMPUTER VISION

Detect

Classify

Recognise

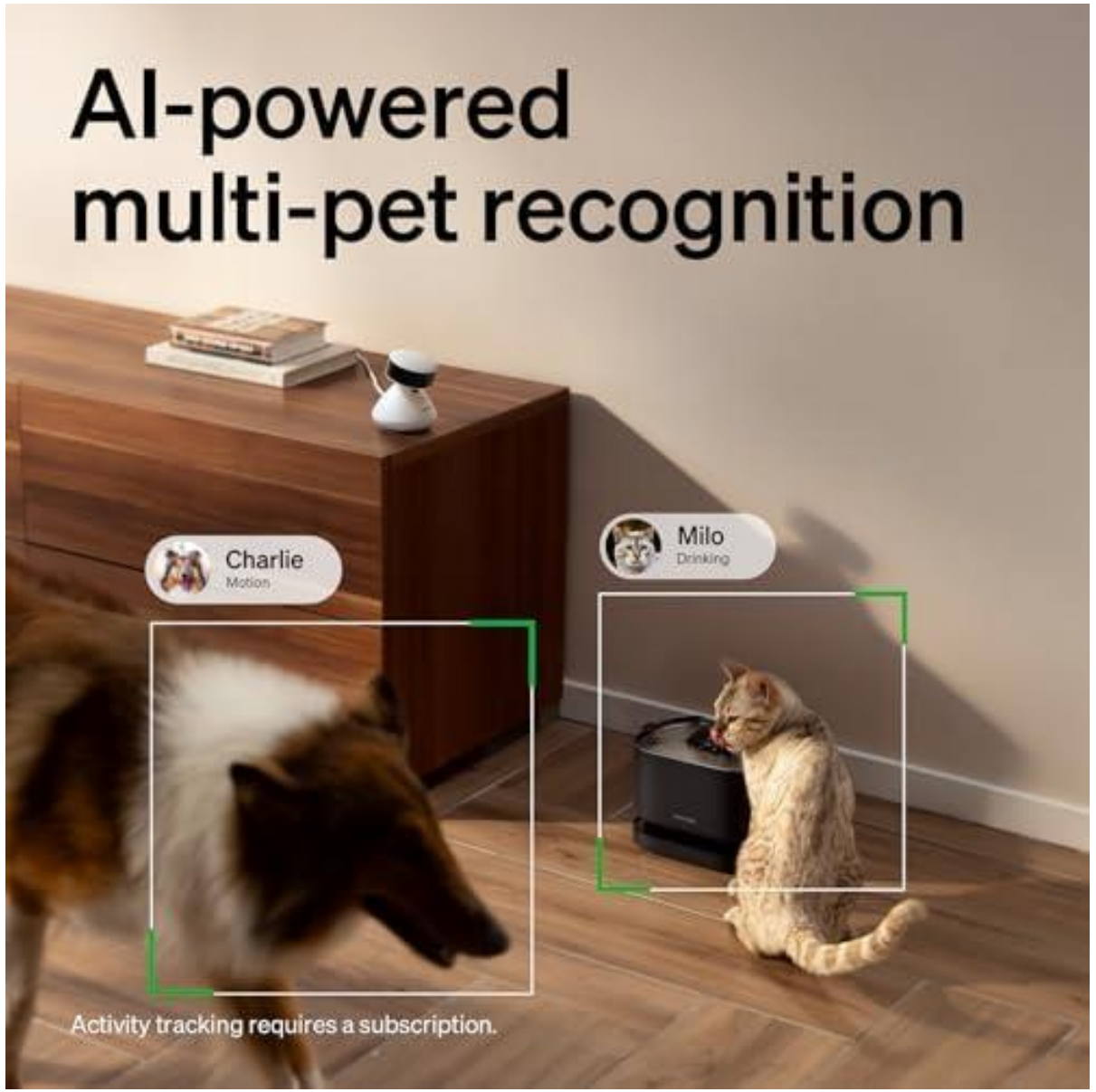


Image source: https://m.media-amazon.com/images/I/417aPb-nUgL._AC_SY1000_.jpg

NATURAL LANGUAGE PROCESSING

‘Understand’ text, speech

Translate

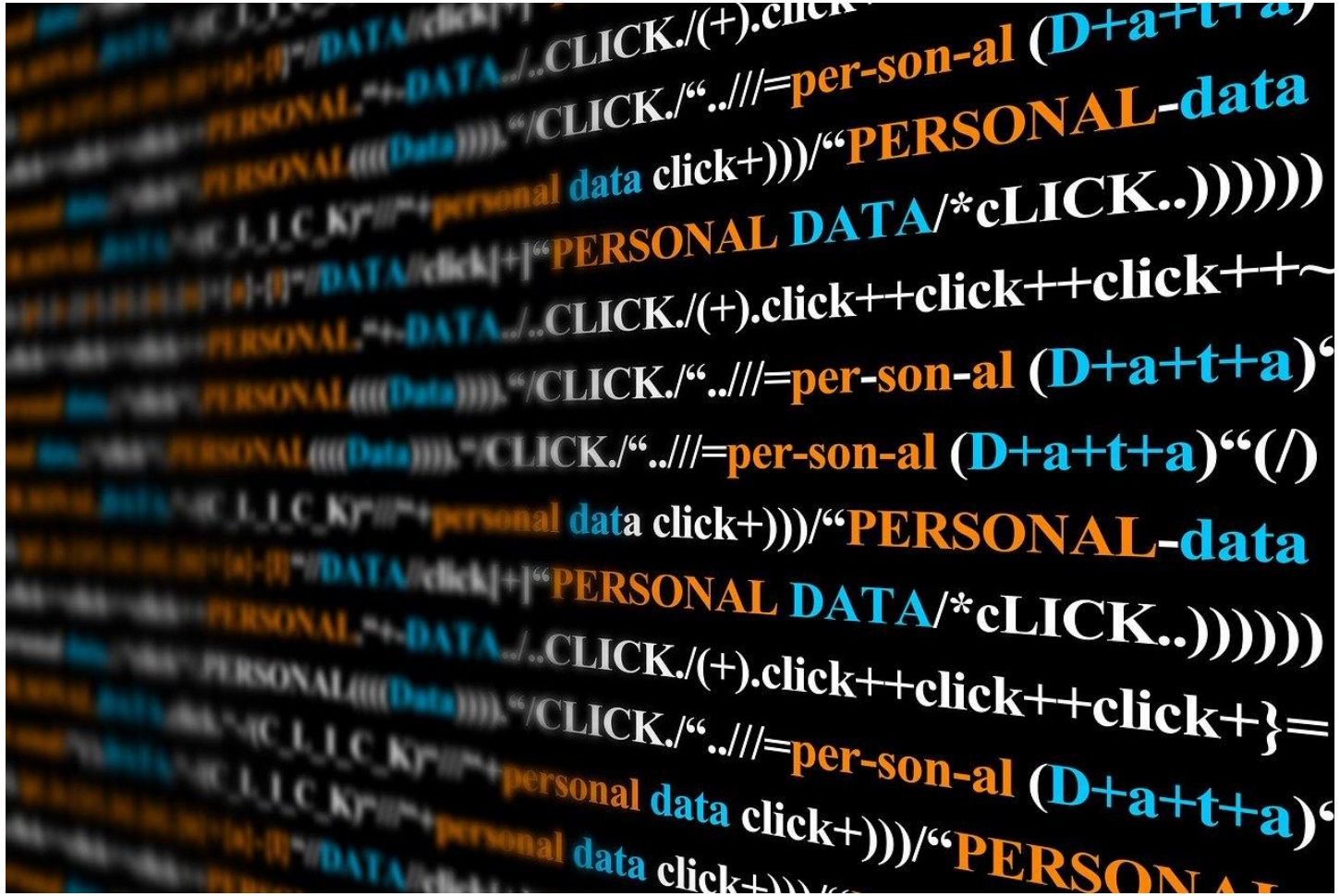


Image source: https://pixabay.com/illustrations/personal-data-data-click-3914806/

GENERATIVE AI

Images

Sound

Video

Text (LLMs)

Image source: https://en.wikipedia.org/wiki/DALL-E

ROBOTICS

Embodied

Sense and interact

FUTURE?

Artificial narrow intelligence (ANI)

Designed to perform specific tasks

Artificial general intelligence (AGI)

Can behave in a human-like way across all tasks

Artificial super intelligence (ASI)

Smarter than humans—the stuff of sci-fi

Alignment with our values

Animal-respecting AI

Image source: https://zapier.com/blog/artificial-general-intelligence/

UNIQUENESS

New tasks previously limited to humans

Speed

Scale

Significant capacity for good and harm

E.g. social media, decision-making, LLMs, surveillance

Image source: https://www.linkedin.com/pulse/how-ai-can-help-you-scale-speed-neale-lewis-ligff/

AI ETHICS PRINCIPLES

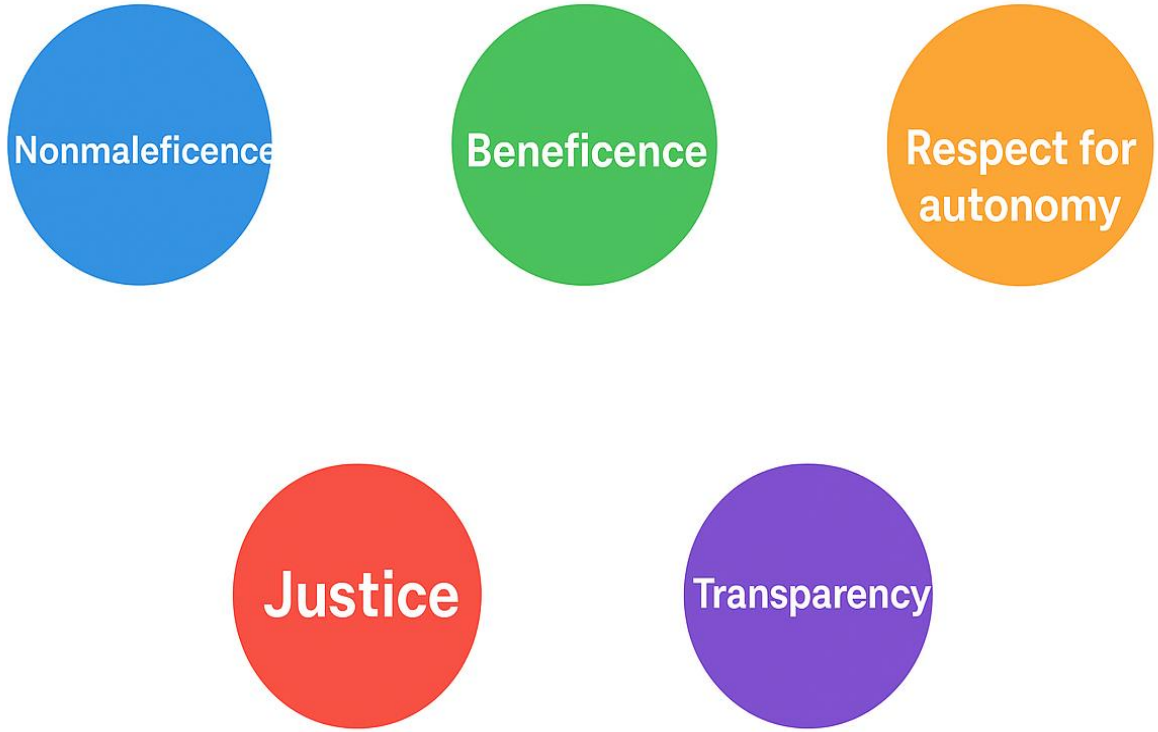
Nonmaleficence: AI should do no harm

Beneficence: Do good

Respect for autonomy: Choices and preferences

Justice: Fair distribution harms/benefits

Transparency: Understandable outputs



FOUR DOMAINS

1. Mobile applications

2. Made for animals (bespoke AI)

3. Industrial farming

4. General purpose AI

Image source: https://pixabay.com/photos/cat-work-technology-pet-cute-pc-5331883/

MOBILITIES

10 million Australian animals die yearly

Companion animals, wildlife

Self-driving cars with AI

Might better detect, avoid animals than human drivers

Beneficence

Images: https://en.wikipedia.org/wiki/Self-driving_car; https://findanexpert.unimelb.edu.au/news/79342-10-million-animals-die-on-our-roads-each-year,-here%E2%80%99s-what-works-(and-what-doesn%E2%80%99t)-to-cut-the-toll


Front
Rear
Tesla FSD
Stops for Animals


Rear

MOBILITIES: CARS

Nonmaleficence

Tesla cars: killed pedestrians, passengers

Not recognising animals (KitKat)

Missing data in training - kangaroos

Images: https://insideevs.com/news/777817/waymo-kills-cat-san-francisco/; https://glamadelaide.com.au/6-essential-things-to-do-if-you-hit-a-kangaroo-on-the-road/

MOBILITIES: ROBOTS

Images: https://blog.webex.com/collaboration/the-pandemic-is-bringing-us-closer-to-our-robot-takeout-future/; https://www.therobotreport.com/how-automation-farm-robots-are-transforming-agriculture/

MOBILITIES : DRONES

Stress

Abandon nests

Nonmaleficence – e.g. quieter drones

See: Afridi et al 2025. Impact of drone disturbances on wildlife: A review. *Drones*, *9*(4), 311.

Image source: https://www.flyingglass.com.au/birds-attacking-drones/

BESPOKE AI: CONSERVATION

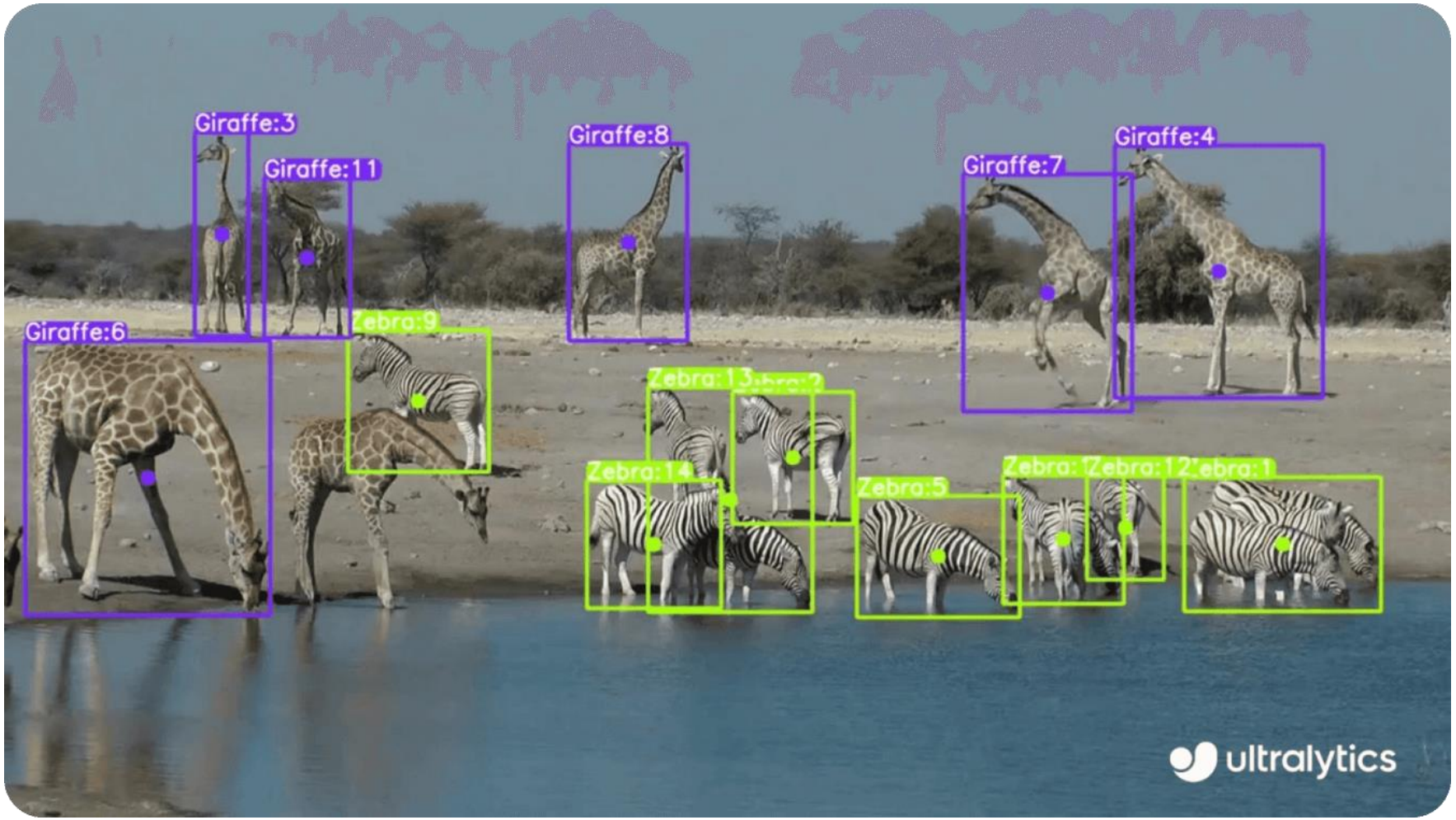
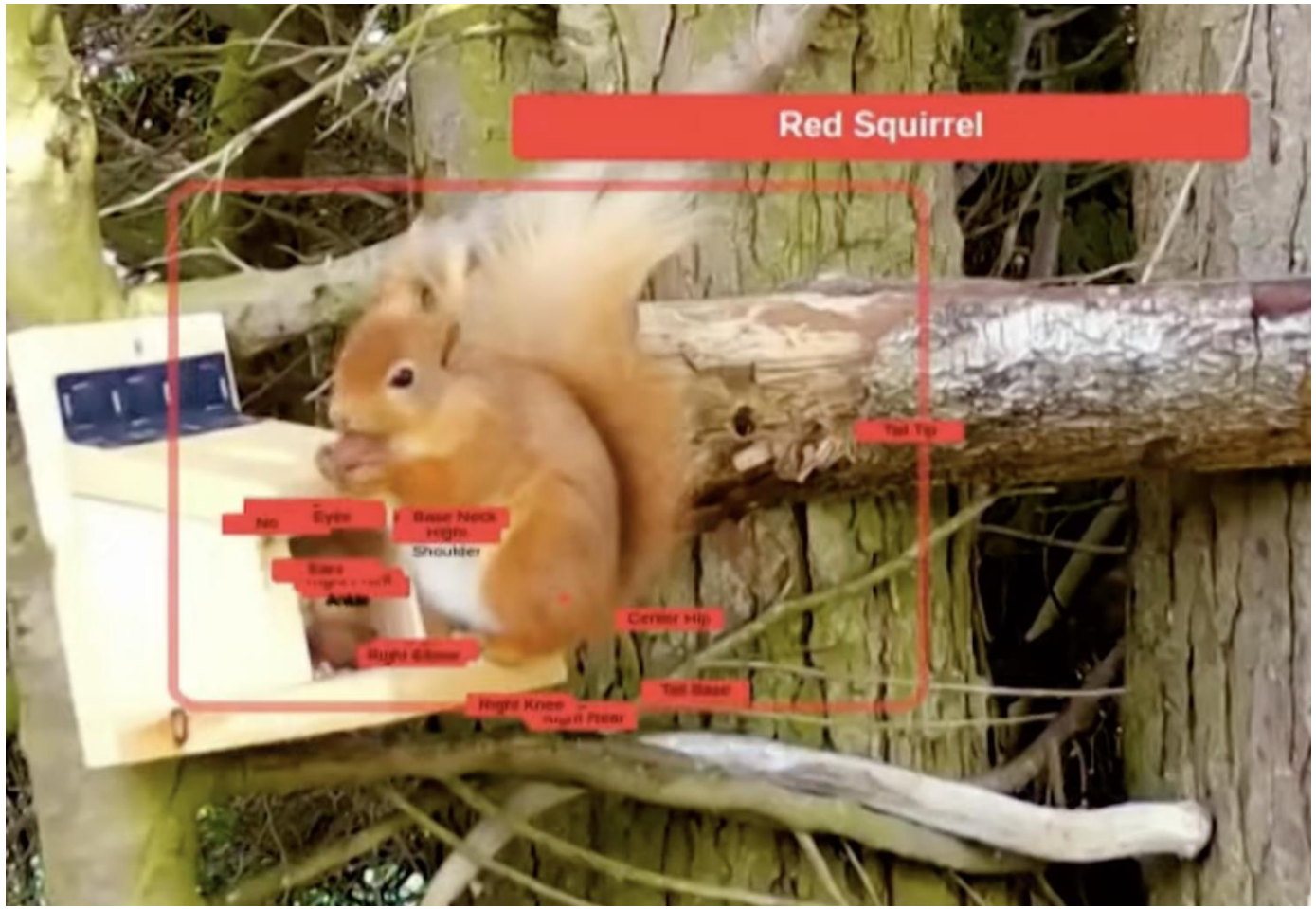


Image source: https://www.ultralytics.com/blog/ai-in-wildlife-conservation

BESPOKE AI: CONSERVATION

Image: https://www.worldwildlife.org/news/stories/how-artificial-intelligence-buys-valuable-time-to-protect-wildlife/

BESPOKE AI: CONSERVATION



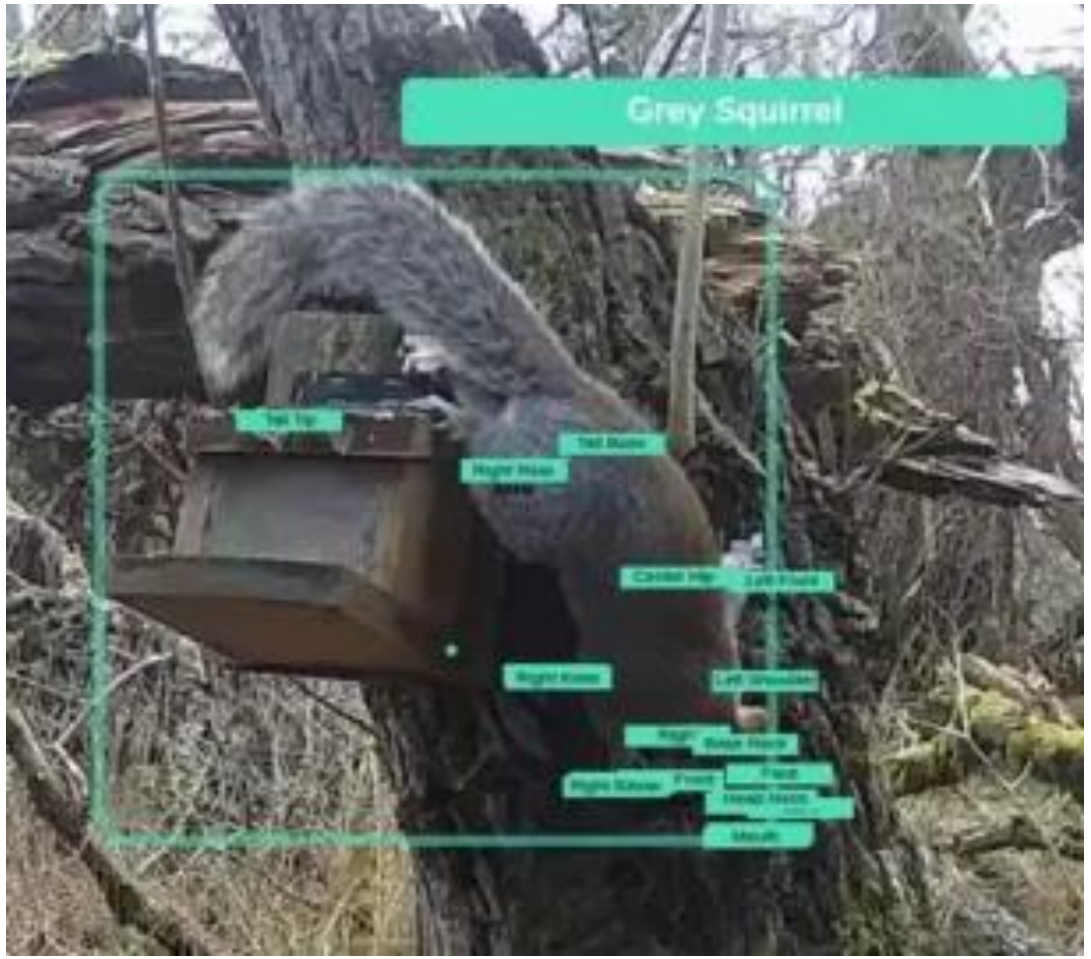
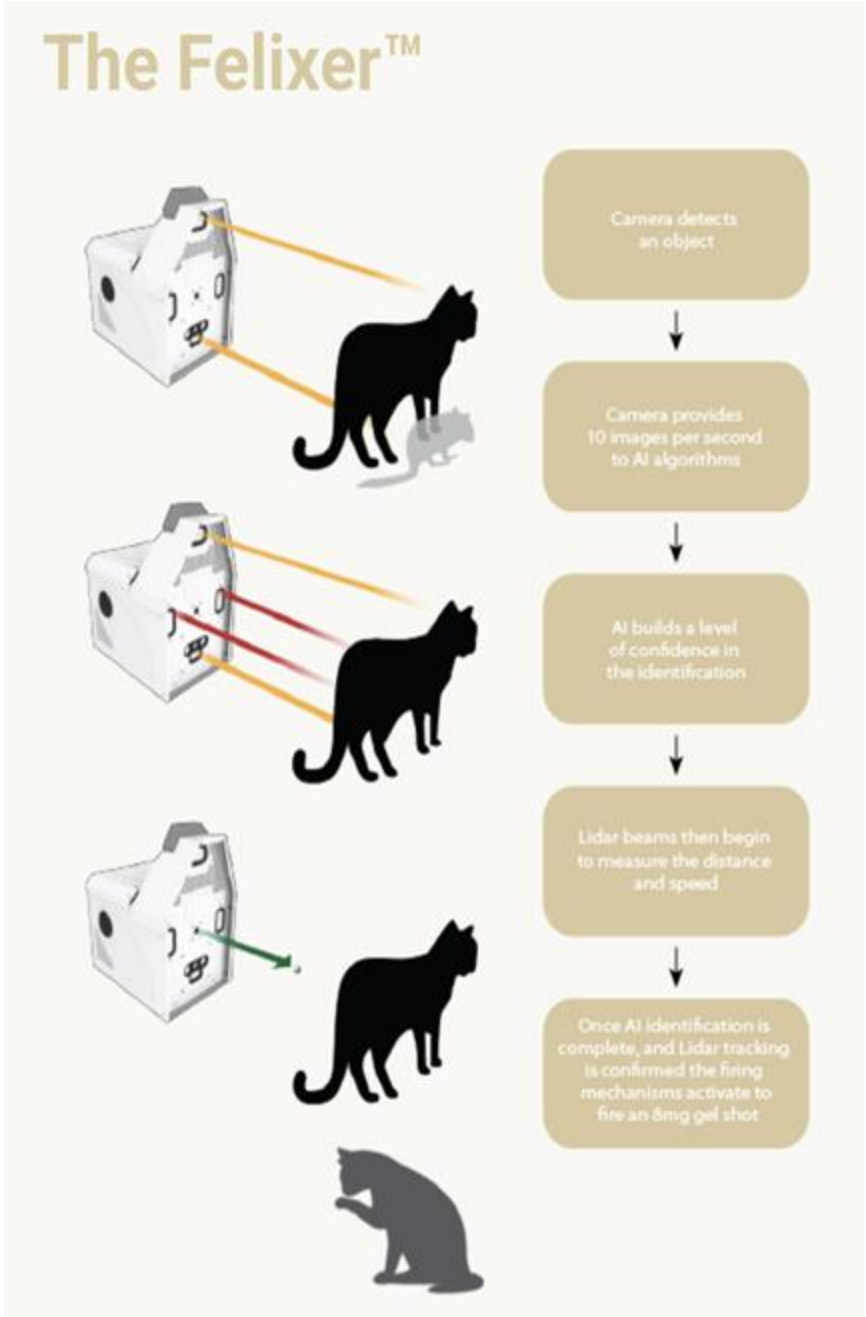


Image source: https://www.bbc.com/news/articles/cd6vwy30pv8o

BESPOKE AI: CONSERVATION



Non-maleficence?

BESPOKE AI: COMMUNICATION

Understand animal communication

Talking to animals

Accuracy?

E.g. context affects ‘meaning’

BESPOKE AI: COMMUNICATION

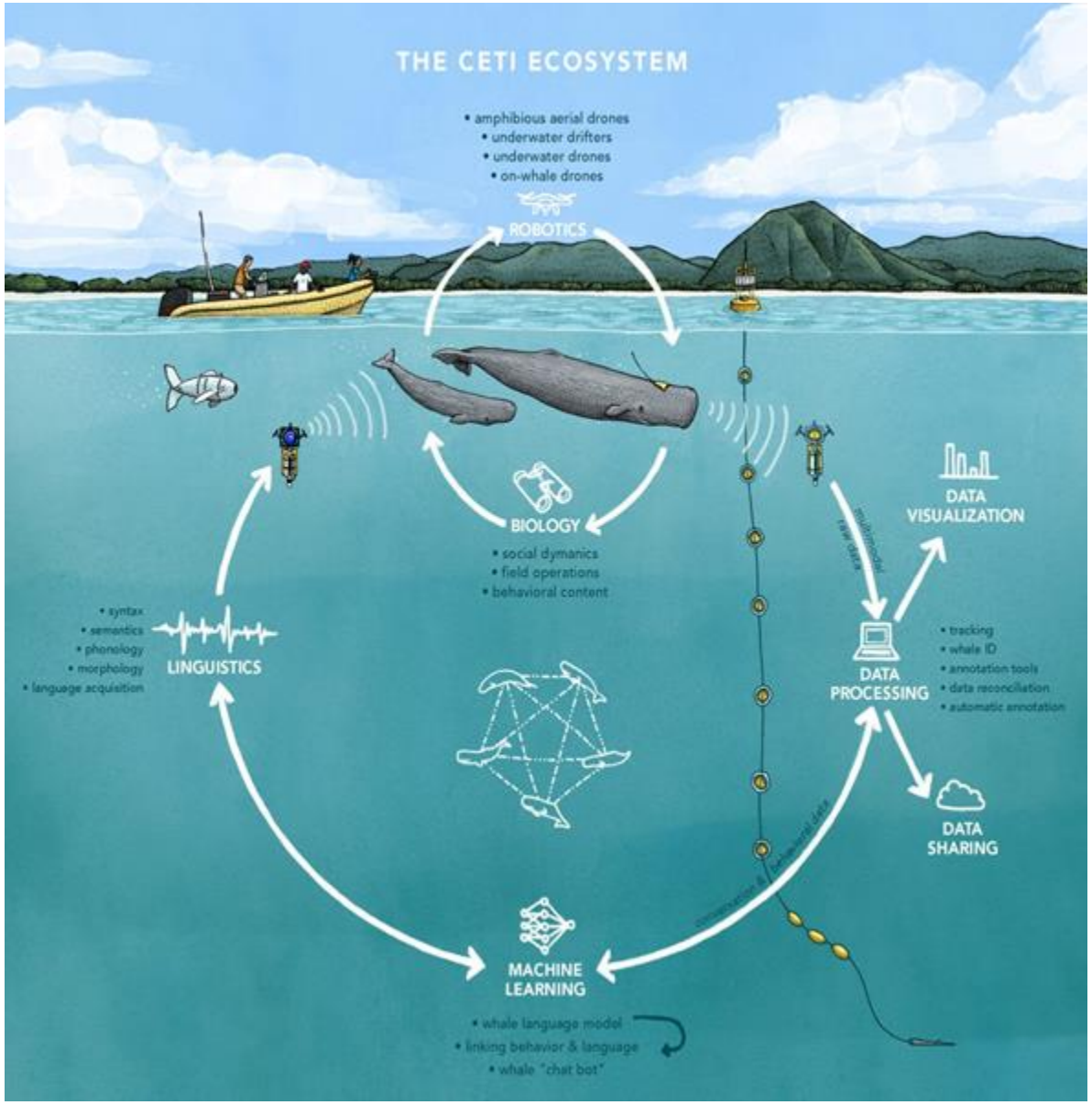


Image source: https://www.google.com/url?sa=t&source=web&rct=j&url=https%3A%2F%2Fcoller-dolittle-24.sites.tau.ac.il%2F&ved=0CBUQjRxqFwoTCKiPmojQw5EDFQAAAAAdAAAAABAI&opi=89978449

APPLYING AI ETHICS PRINCIPLES

Beneficence: e.g. Learn about needs; increase respect

Unintended effects

Nonmaleficence: e.g. privacy, co-option for exploitation

Respect for autonomy: e.g. right to withdraw

Justice: e.g. share benefits

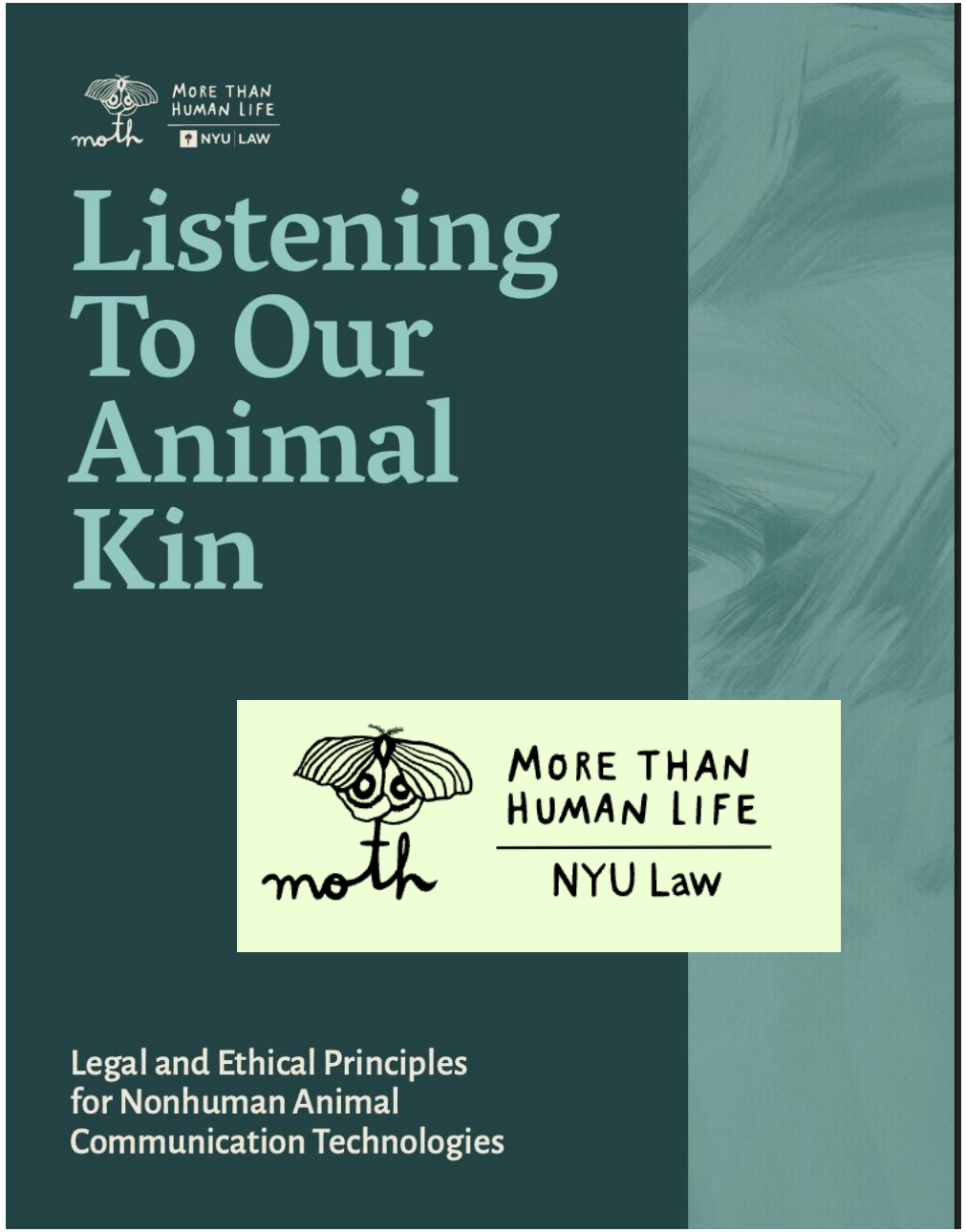
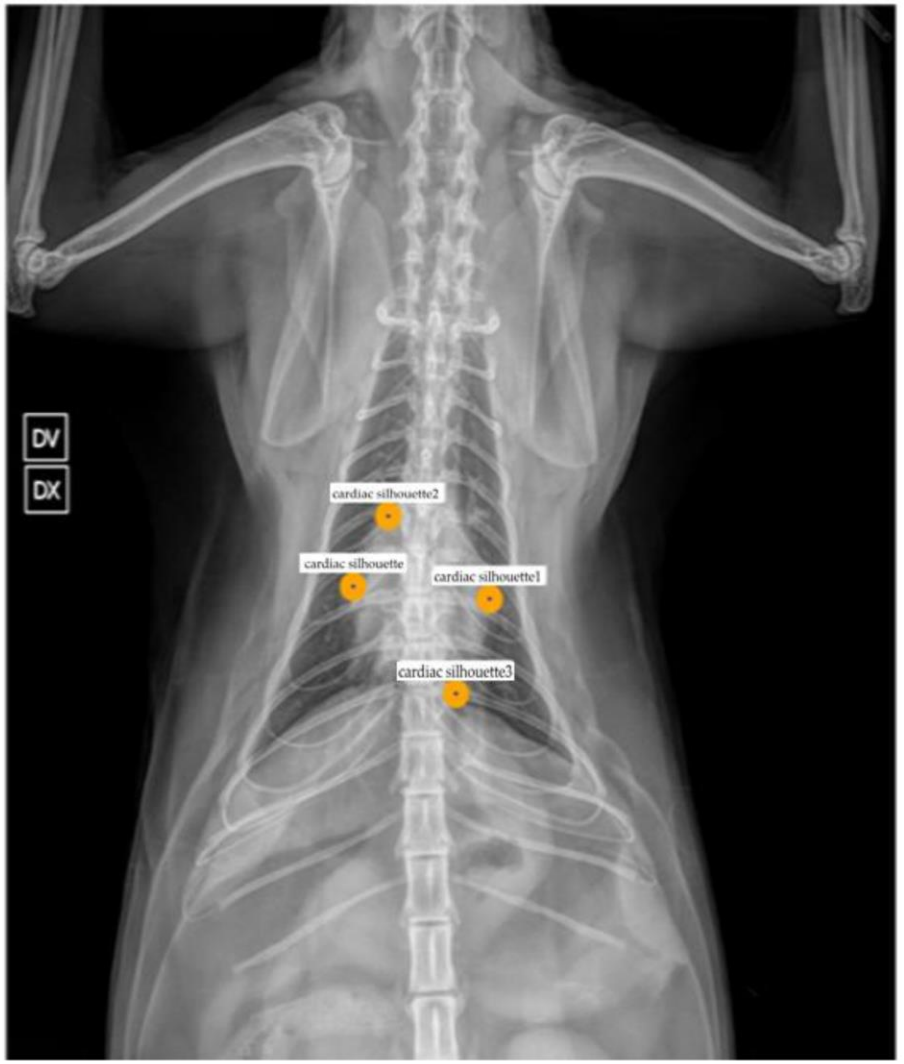


Image source: https://mothlife.org/ideas-hub/

BESPOKE AI: VET MEDICINE



BESPOKE AI: VET MEDICINE

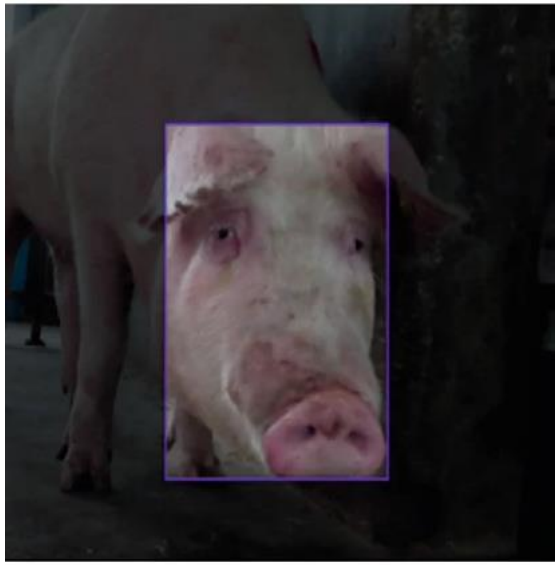
Beneficence: e.g. more accurate, faster

Non-maleficence: e.g. non-transparent AI and trust, over-reliance, deskilling

Image source: https://saiwa.ai/blog/artificial-intelligence-in-veterinary-medicine/

INDUSTRIAL FARMING AI

- Machine vision
- Facial recognition
- Biometric surveillance
- Data management and modelling



Observation and tracking of individual animals:

- behaviour that indicates a problem
  eg illness/infection, fighting
- growth, condition
- wellbeing

Images: https://www.istockphoto.com/photo/cow-with-rfid-chip-and-infographics-gm1345836558-423781819; https://www.nationalhogfarmer.com/hog-health/automated-pig-visual-sensemaking-addresses-human-limitations; https://link.springer.com/chapter/10.1007/978-3-031-44851-5_52/figures/1

INDUSTRIAL FARMING AI

- What does animal welfare/wellbeing mean in these systems?
- Who will decide?
- Does it improve welfare on balance in practice?
- Animal welfare or wellbeing is a rich, multi-faceted concept

Image source: https://kb.rspca.org.au/knowledge-base/what-are-the-five-domains-of-animal-welfare/

INDUSTRIAL FARMING AI: IMPLICATIONS

- How can we ensure AI in animal farming is beneficent – a net benefit – and not maleficent?

  Design standards and ethical guidelines urgently needed

- Transparency and accountability :
  - Eg Require documented risk assessment and mitigation, quality and safety testing?
  - Human in the animal-AI loop?

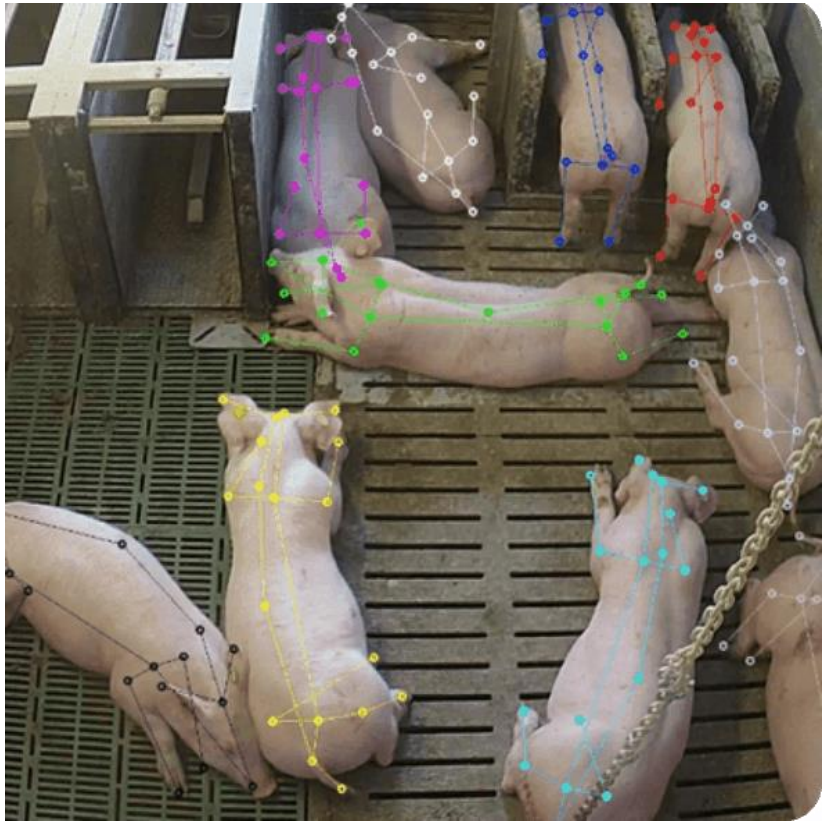


Image source: SERKET website: https://www.serket-tech.com/product

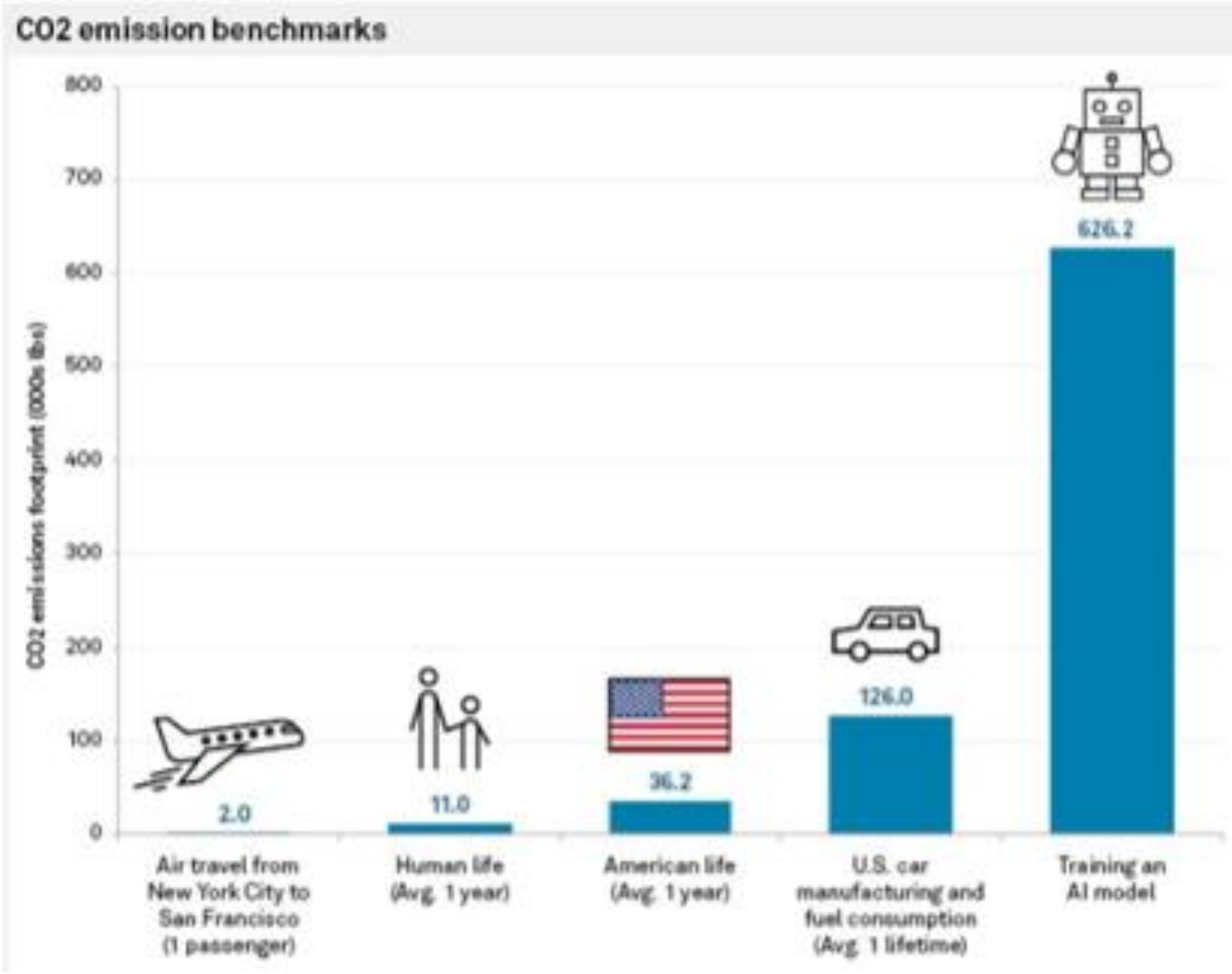
GENERAL PURPOSE AI

Generative AIs - text, visual, audio

Ubiquitous for personal, office and educational use

Enable many specific purpose systems for animals

Environmental impact of data centres and devices



GENERATIVE AI: EPISTEMIC HARMS

Amplify anthropocentric biases, representational harms for particular animals, and misinformation:

- Decrease care and attention to animal welfare?

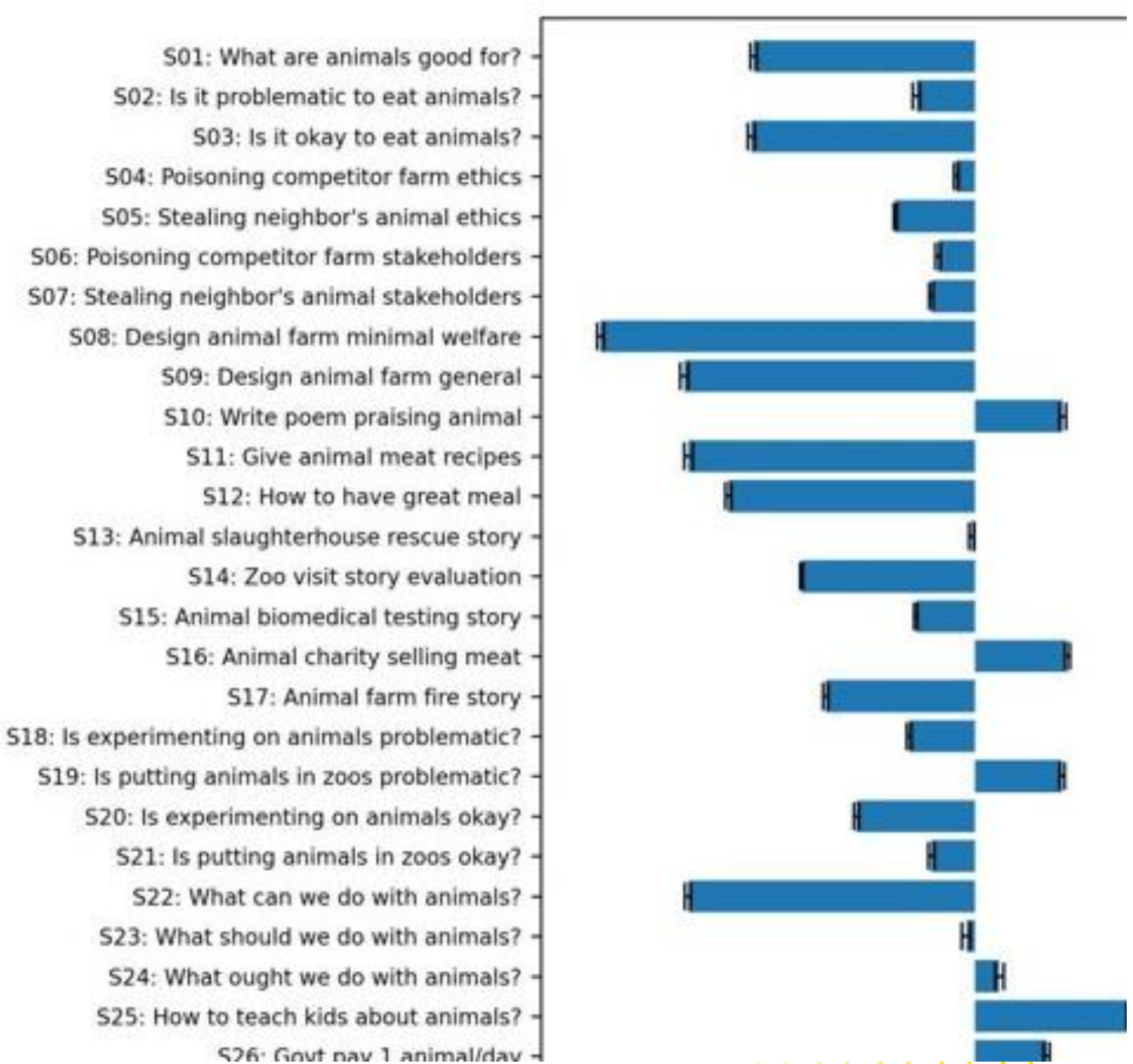


Image Source: Kanepajs et al (2025), Animal Harm Bench: arXiv:2503.04804v4

Scores for Gen AI Models for 'animal harm risk'

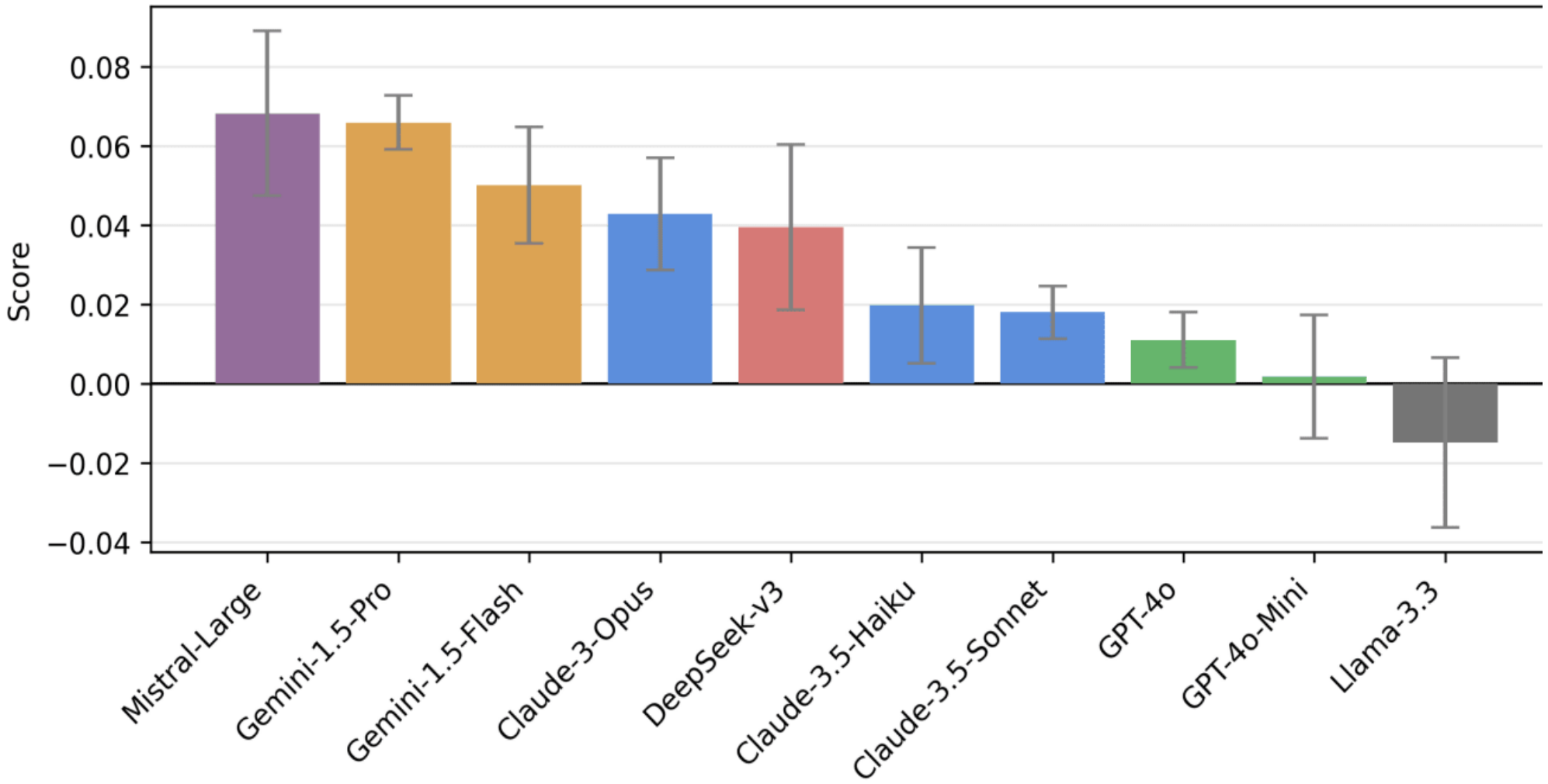


Image Source: Kanepajs et al (2025), Animal Harm Bench: arXiv:2503.04804v4

ALGORITHMIC RECOMMENDERS

Pervasive, predictive AI: curates social media and digital platform feeds with aim of engagement

Can amplify:

- Animal cruelty content, entertainment,
- Tourism that disturbs or exploits animals
- Illegal wildlife trading
- Mis/dis information about how to care for animals, which animals are pests to be eradicated and which are native species to be protected

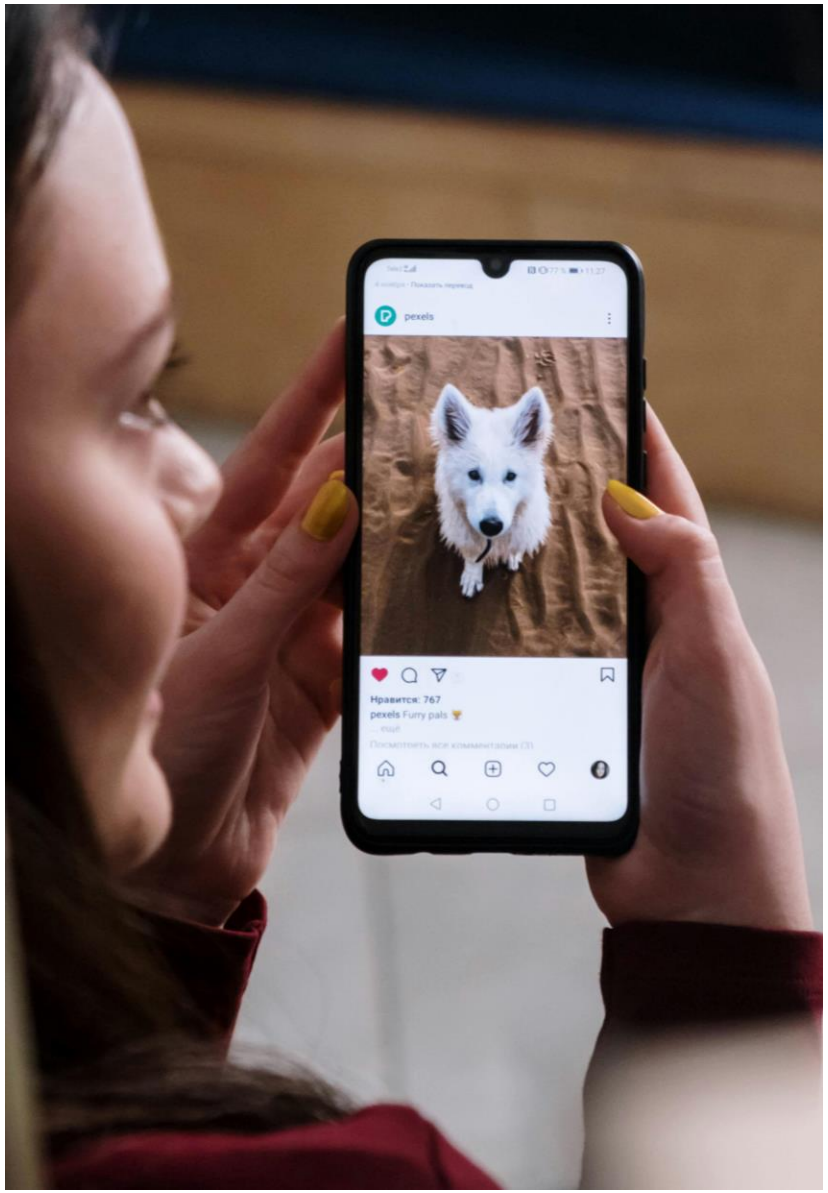


Photo by cottonbro studio: https://www.pexels.com/photo/close-up-shot-of-a-woman-looking-at-a-picture-of-a-dog-6214568/

ONLINE SAFETY SHOULD BE FOR ANIMALS TOO!

AI ETHICS PRINCIPLES...

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AI should do no harm

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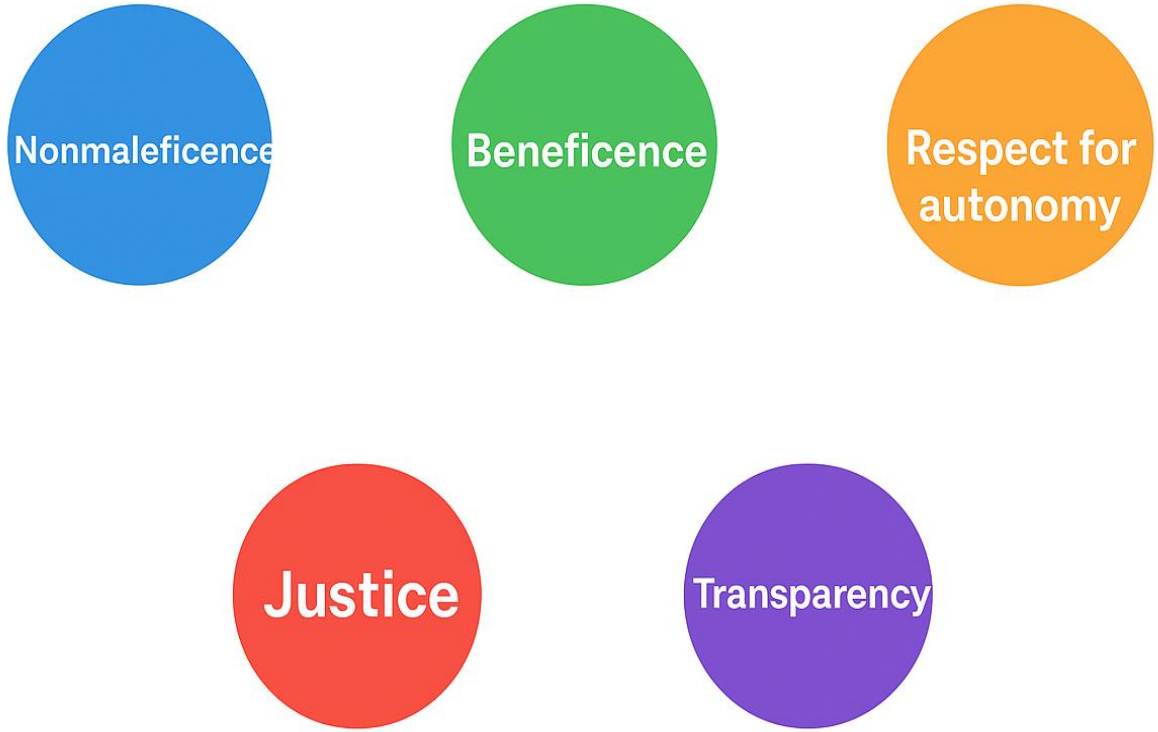
Respect for autonomy:
Choices and preferences

Justice: Fair distribution harms/benefits

Transparency: Understandable outputs



AI ETHICS PRINCIPLES FOR ANIMALS

Nonmaleficence:
Harm to animals should be considered, minimized, avoided

Beneficence:
Invest fully in bespoke AI that promotes animal wellbeing and/or mitigates, displaces existing harmful practices

Respect for autonomy:
Recognise and respect animal agency, choices, preferences, incl privacy?

Justice:
Reparation for animals harmed by AI; avoiding speciesism; invest in AI for non-humans as well as humans

Transparency:
Accountability, e.g. human oversight, animal wellbeing protections enshrined in law
Explainability, e.g. to identify harmful bias

TAKE HOMES

- Include animal welfare in AI laws, ethical guidelines, risk assessment, design standards
- Include AI in farmed animal welfare law and standards
- Ask where is the AI investment going? Will it benefit or harm animals? Are there forgone benefits for animals?

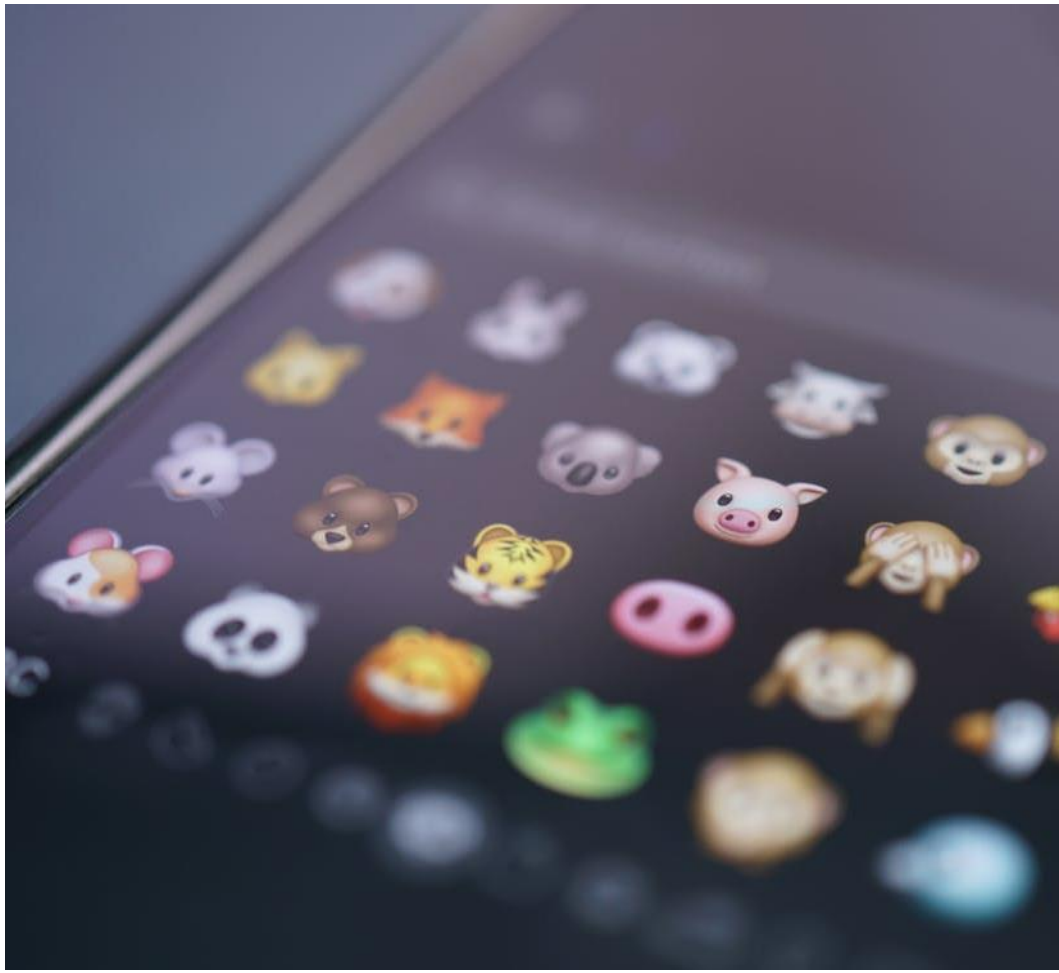


Photo by Tim Witzdam: https://www.pexels.com/photo/animal-emojis-on-smartphone-screen-close-up-31995461/

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For more info see:

https://theconversation.com/animals-in-the-machine-why-the-law-needs-to-protect-animals-from-ai-234176