Including animals in ethics applied to AI

Peter Singer and Tse Yip Fai

Common topics in AI ethics

- Fairness and algorithmic bias
- Impacts on employment and inequality
- Existential risks due to AI
- The moral status of conscious or sentient AI
- But one category of sentient beings is virtually never mentioned

The missing issue!

Animals!

Our findings:

Reviewed	Discussion about animals?
77 AI/Computer ethics courses	N
>200 papers and books on AI/AI ethics/AI alignment	7
72 AI ethics principles or statements	1 (Serbian Gov't)

- The welfare of – so far merely hypothetical – conscious machines is mentioned far more often than that of animals.

AI ethics:
The case for including animals

Our *argument*:

If animals matter morally,

And, if AI impacts them,

Then, AI ethics should care about animals

Do animals matter?

Why animals matter:
A utilitarian view

"*The question is not, Can they reason?, nor Can they talk? but, Can they suffer?*

- Jeremy Bentham

UN's AI Ethics Statement already implicitly includes animals

"AI systems should not be used in ways that cause or exacerbate harm, whether individual or collective..."

Source: Principles for the Ethical Use of Artificial Intelligence in the United Nations System

It seems undeniable that to cause animals pain or suffering is to cause them harm.

The Government of Serbia agrees

"Ethical guidelines for safe and reliable use of AI", Government of the Republic of Serbia, 23 March 2023

"Ethics studies human behaviour that is considered acceptable and moral from certain points of view, where this behaviour affects other humans, animals that may feel pain, suffering, fear and stress, and ecosystems."

Why animals matter: Other views

Other ethical theories

- Deontology - Christine Korsgaard, Tom Regan
- Contractualism - Mark Rowland
- Feminism and care ethics - Josephine Donovan
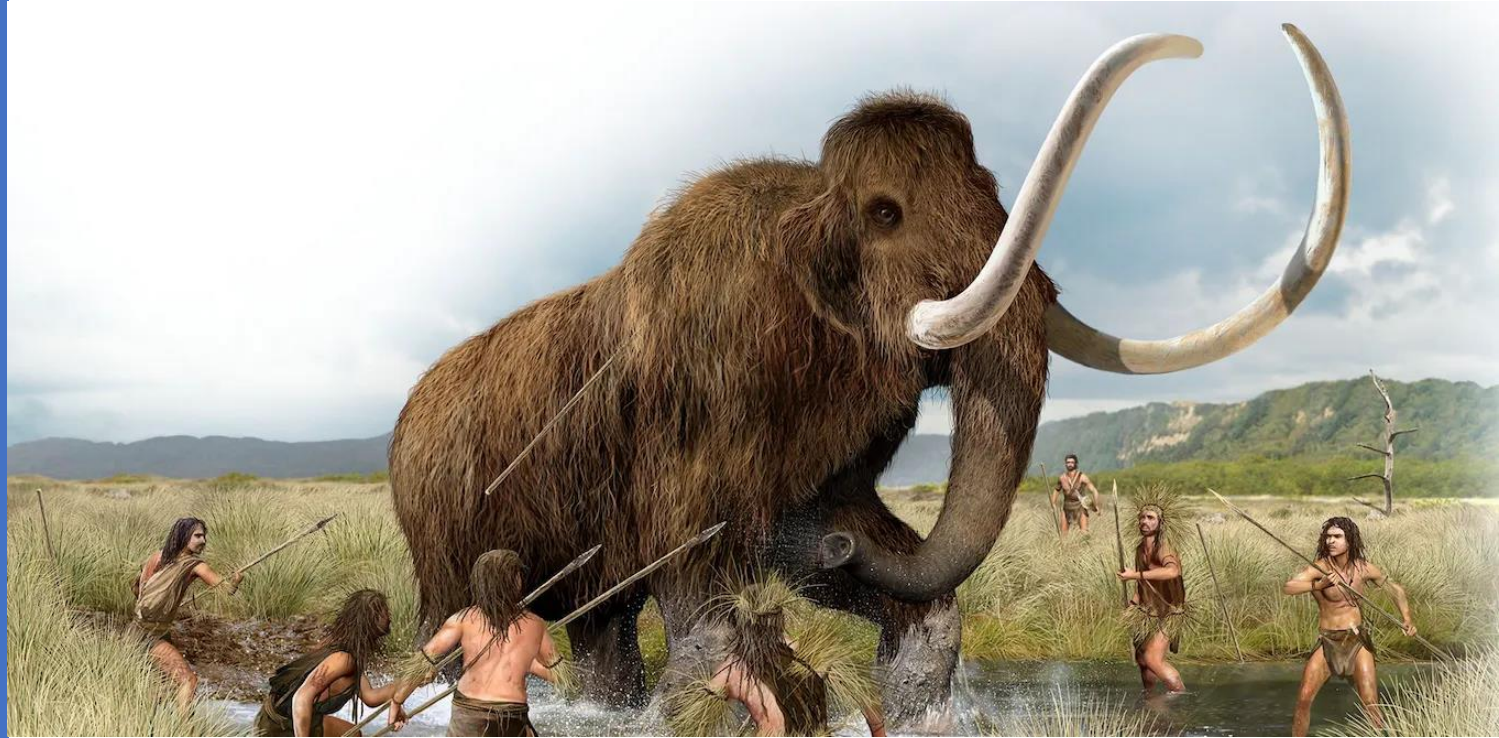- Non-Western philosophies – Indian (Buddhism, Jainism)

If we think animals matter to *some* degree. **We should care about them in AI ethics!**
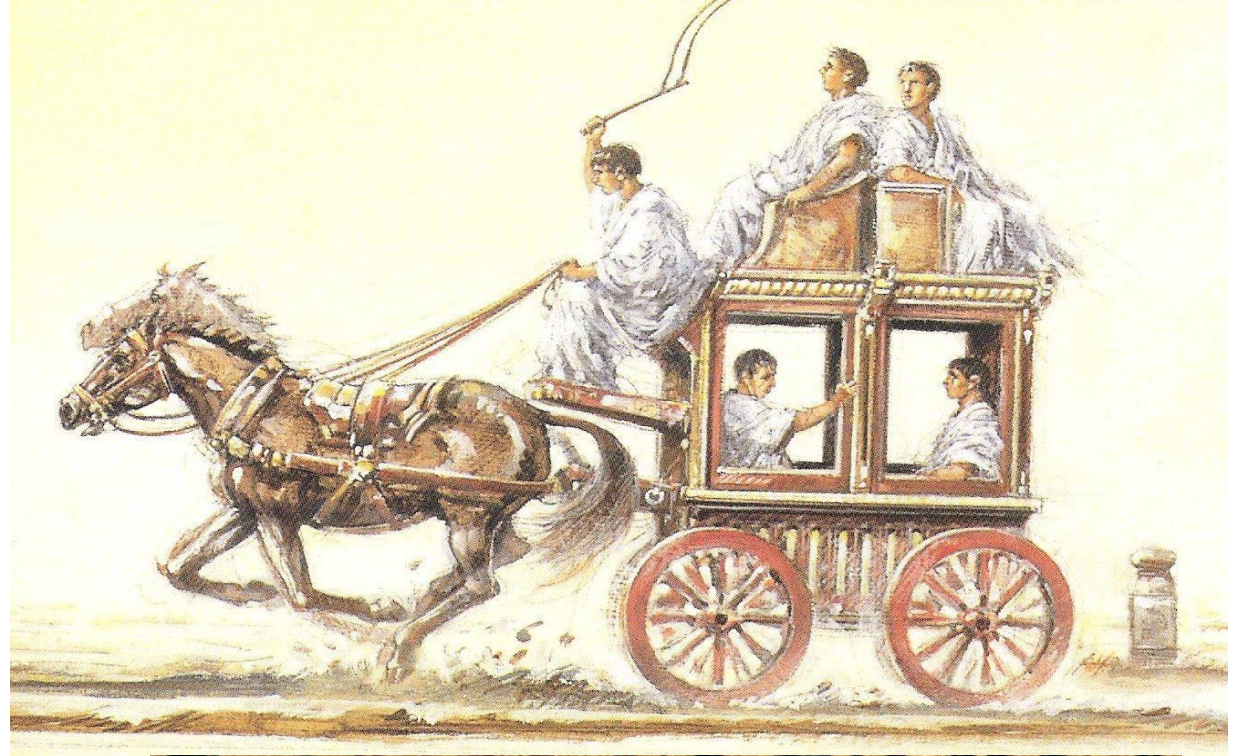
But will AI affect animals?

Weapon, fire, and megafauna

Wheels and animals

Fences and animal agriculture

Antimicrobials and intensive animal agriculture

Transcript: "Even if a breakthrough does occur due to *overcrowding* and *poor sanitation*, the cushioning effect of the preventive medication will keep the deaths and loss to a very small percentage, compared to birds not fed the preventive medication."

Technologies and animals

Track record: More harms to animals than benefits

Most technologies were *not* invented *for* the animals

Harm > benefit could be the default for AI too

Part 3

The impact of AI on animals NOW:

Case studies

Animal-killing autonomous drones

Animal-killing autonomous drones

NEWS | 24 January 2019

Drones unleashed against invasive rats in the Galapagos

Tiny copters deliver poisoned bait to islands where rodents threaten native birds and plants.

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Ethical problems

Ethical issues:

- Human interest vs animals' interests
- Unintended killing (wrong targets)
- More vs less humane ways of killing

Autonomous vehicles (AV)

Autonomous vehicles (AV)

All cars might hit animals!

- Huge numbers (without AV):

- An Idea: In the US, roughly 89 to 340 million bird roadkills each year. (Loss et al)

Autonomous vehicles (AV)

AV (prototypes) hit animals!

- AVs does not identify most animals
  - Except cats, dogs, large animals
- Business incentives –

No relation to profit = no concern
  - Hit dogs/cats -> corporate image loss
  - Hit a large animal -> hurt the passengers and the cars
  - Hit other animals -> OKAY!

Autonomous vehicles (AV)

Example 1: Pigeon

Autonomous vehicles (AV)

Example 2: Squirrel

What should an AV do?

(Photo credit: Apple Daily Hong Kong)

Autonomous vehicles (AV)

Not only conservation, the animals' suffering matters too

- Photo too gruesome to show:

https://www.alamy.com/stock-photo-frog-road-kill-a-common-frog-crushed-on-a-paved-country-lane-pink-24521134.html

- Description: "**Frog Road Kill. A common frog crushed on a paved country lane. Pink mouth and eyes open.**"

Autonomous vehicles (AV)

A practical first step for ethical AV

- **Identify all mid-size vertebrates first?**
- Next: Identify small vertebrates
- Include invertebrates -> Backlash
  - Technically much harder
  - People care less, if at all

Using AI to communicate with animals

Using AI to communicate with animals

ML might be able to decipher animal languages

A few existing projects

Science

Current Issue   First release papers   Archive   A

HOME > SCIENCE > VOL. 381, NO. 6654 > USING MACHINE LEARNING TO DECODE ANIMAL COMMUNICATION

🔓 | PERSPECTIVE | PERSPECTIVE   f

Using machine learning to decode animal communication

New methods promise transformative insights and conservation benefits

CHRISTIAN RUTZ , MICHAEL BRONSTEIN, AZA RASKIN, SONJA C. VERNES, KATHERINE ZACARIAN, AND DAMIÁN E. BLASI

Using AI to communicate with animals

Dancing Honey bee Robot Elicits Dance-Following and Recruits Foragers

Tim Landgraf, David Bierbach, Andreas Kirbach, Rachel Cusing, Michael Oertel, Konstantin Lehmann, Uwe Greggers

A prototype of the robotic model proved successful in convincing bees to fly to certain areas, though the team is still working on improving the method to ensure consistent and accurate results.

But what about the ethics?
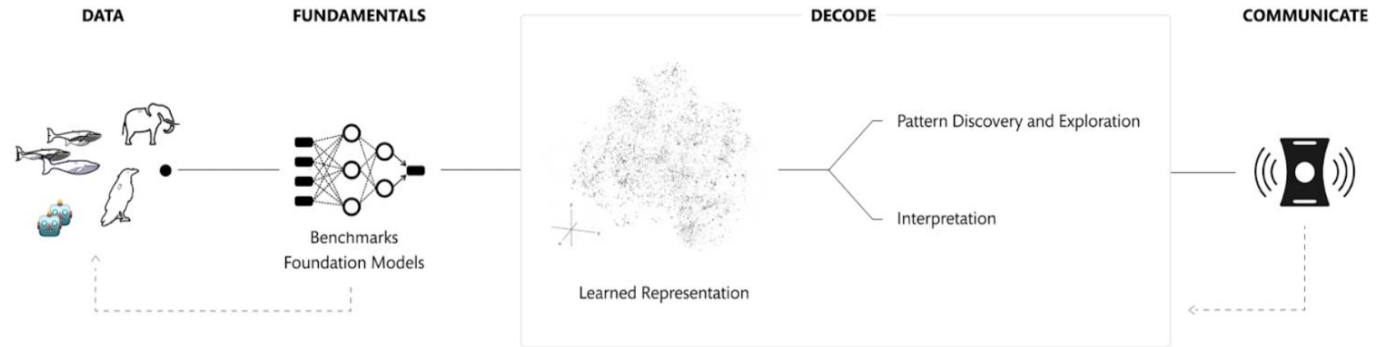
No discussions of ethics in the paper

Should we use the technology if we are not sure?

- May convince bees to go to wrong places
- Messages may cause distress
- Harmful dances may be learned and passed down

A more responsible approach

Earth Species Project

DATA • FUNDAMENTALS • DECODE • COMMUNICATE

Benchmarks
Foundation Models

Learned Representation

Pattern Discovery and Exploration

Interpretation

A more responsible approach (1)

New Ethical Questions

Playback experiments carry the risk of causing harm to an animal, for example by influencing their behavior in such a way that they lose a foraging or mating opportunity. For this reason, all playback experiments will be performed in partnership with biologists. Where established ethical frameworks (Cuthill, 1991; Putnam, 1995) hold, we will work within those frameworks in collaboration with biologists on their species of study.

An instructive example has been the way whale songs are [known to go viral](#) among the population in the ocean. Humanity could cause more harm to the animal kingdom than just giving a group of whales an ear worm.

"If we're not careful, you could disrupt a 34-million-year old culture," Raskin said. "Which would be a monumental tragedy."

A more responsible approach (2)

"Can we do generative, novel animal vocalizations?" Raskin said. "We think that, in the next 12 to 36 months, we will likely be able to do this for animal communication. You could imagine if we could build a synthetic whale or crow that speaks whale or crow in a way that they can't tell that they are not speaking to one of their own. The plot twist is that we may be able to engage in conversation before we understand what we are saying."

Humans may enjoy manipulating animal behaviors

and less interested in what we are actually communicating

AI in factory farming

AI in factory farming

AI entering the factory farming industry

- Pig
- Cow
- Dairy
- Broiler
- Egg
- Fish
- Shrimp
- Insect
- Selective breeding

AI in factory farming

AI is used in:

- Animal identification (face, body feature)
- Growth rate modelling
- Disease detection
- Disease prediction and modelling
- Feed optimization
- Genetic selection
- Animal handling robotics

Isn't AI better for farmed animals?

There might be short term benefits

- Early disease/injury detection
- Better health
- No human cruelty

Isn't AI better for farmed animals?

But probably worse in the long-term

- Better disease control-> Increased density
  - Reminder: It happened before
- Density ↑ + price ↓ -> more animals farmed

AI *against* factory farming

AI in factory farms will likely increase overall suffering

Instead, use AI to fight factory farming

- Research in:
- **Plant-based meat, egg, dairy alternatives**
- **Cultivated meat**

Conclusion

Animals matter

AI impacts animals

Therefore, **AI ethics should care about animals**

Final words

Don't be evil
(no longer there at Google)

Do no harm | AI systems should not be used in ways that cause or exacerbate harm, whether individual or collective, and including harm to social, cultural, economic, natural, and political environments. All stages of an AI system lifecycle should operate in accordance with the purposes, principles and commitments of the Charter of the United Nations. All stages of an AI system lifecycle should be designed, developed, deployed and operated in ways that respect, protect and promote human rights and fundamental freedoms. The intended and unintended impact of AI systems, at any stage in their lifecycle, should be monitored in order to avoid causing or contributing to harm, including violations of human rights and fundamental freedoms.

Principles for the Ethical Use of Artificial Intelligence in the United Nations System

Avoid harm…

But also, think of ways to have *positive* impacts

Thank you!

Reference:
AI ethics: the case for including animals

https://doi.org/10.1007/s43681-022-00187-z