



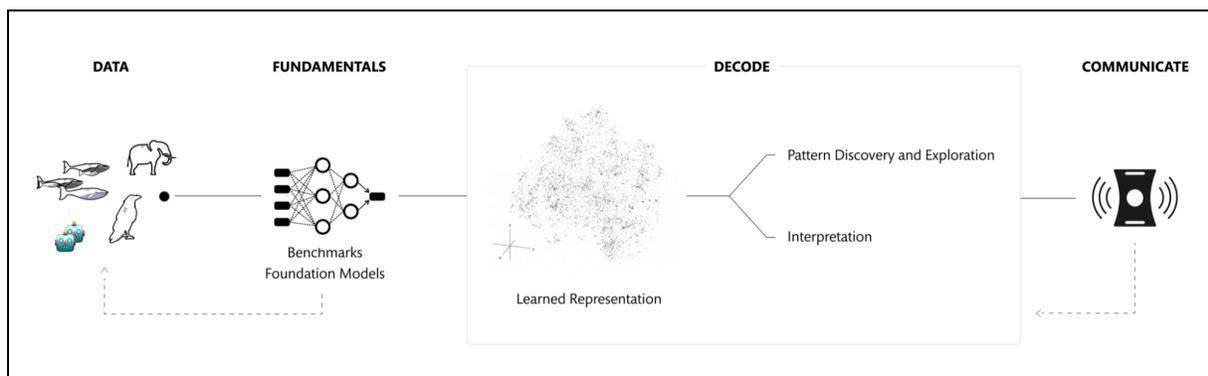
Earth Species Project

Earth Species Project (ESP) is a non-profit organization focused on using artificial intelligence to advance our understanding of animal communication, and ultimately to decode non-human languages. We believe AI has the potential to transform the way we perceive the world around us, expanding the ability of human beings to learn from other species. Our hope is that this will make a significant contribution to altering human perspective on how we relate to the rest of nature.

“I like to think of AI as similar to the invention of modern optics, which gave us the telescope and helped us see that the Earth was not at the center. We are now at that moment where we have new scales of data and AI is giving us the ability to perceive large scale patterns – pointing this new instrument at the patterns of the planet will help us see that humanity is not is not at the center.” Aza Raskin, ESP Cofounder and President.

What we do

ESP’s team of AI research scientists works in close partnership with leading biologists, ethologists and research labs from around the world to use machine learning to advance the study of communication in other species, while also supporting conservation efforts.



ESP Technical Roadmap, 2022

[Our technical roadmap](#) describes how ESP’s research projects fit together and contribute to our ultimate goal of unlocking the potential for two-way communication with other species. The roadmap builds on the recent advances in the fields of machine learning, including the rise of foundation models trained on unlabeled data at scale, which have transformed the ability of machines to process and translate human language.

We are working to understand the full multimodal complexity of non-human communication, and are using datasets from a wide range of species, including wild animals such as various birds, primates, cetaceans, elephants, bats and amphibians as well as domesticated dogs and cats.

Key research projects underway include the development of the first large foundation models trained on large scales of unlabelled biological data; benchmarks that allow us to measure progress in the field; and self-supervised machine learning models for discovering patterns in animal behavior data. Most recently, we have published the **Animal Vocalization Encoder based on Self-Supervision (AVES)**, a foundation model that uses self-supervised learning to greatly increase the efficiency of tasks such as detection and classification; and the **BEenchmark of Animal Sounds (BEANS)**, the first ever benchmark for animal vocalizations.

“There is something deeply comforting to think that AI language tools could do something so beautiful, going beyond completing our emails and putting ads in front of us, to knitting together all thinking species.” Mary Lou Jepsen, Founder and CEO, Openwater

Our impact

The application of machine learning to accelerate animal communication research has the potential to help researchers and conservationists with a wide range of tasks, from population monitoring to recognizing species or individuals, and understanding the impact that human beings are having on species and their habitats. Our goal is to ensure that all our work is publicly accessible, in order to make a contribution to building the fields of animal behavior and machine learning more broadly and unlocking new frontiers in AI research.

“The new analytical work ESP is spearheading is allowing us to see patterns and understand not only our data but also the behavior of animals in a way that we couldn’t have done before. This allows us to better focus conservation efforts on human activities disruptive to certain events or behaviors in animals,” Dr. Ari Friedlaender, UC Santa Cruz.

Who we are

ESP was founded by tech-sector pioneers deeply invested in creating change: Aza Raskin (also co-founder of the Center for Humane Technology and recently named a National Geographic Explorer); Britt Selvitelle (part of the founding team at Twitter); and CEO Katie Zacarian (formerly with Facebook, and with a background in applying technology to support conservation outcomes).

The international AI research team brings extensive expertise ranging from mathematics to neuroscience, deep learning and natural language processing, while the operations and development and outreach teams have decades of experience with non-profit organizations such as the UN Foundation, Human Rights Foundation, Jane Goodall Institute and IUCN.

Our partners

At ESP we know that interdisciplinary collaboration is critical to achieving success in this endeavor. We have collaborations with more than 40 biologists, machine learning researchers and institutions, among them the University of St. Andrews, UC Santa Cruz, Monterey Bay Aquarium Research Institute, National Geographic, Google, and the Internet Archive. We have also formed a number of key partnerships with leaders in behavioral ecology, evolutionary biology and bioacoustics who we are engaging with on a number of our research experiments.

“The extraordinary advances we’re seeing in AI suggest that we are moving rapidly toward a world in which two-way communication with another species will be possible. We can only imagine how transformative that new ability will be.” Katie Zacarian, ESP Cofounder and CEO.

For more information, please visit us at www.earthspecies.org