Good evening. We hear a lot about the important problems of climate change and deforestation and the threat they pose to the environment and to animals. But the biggest threat to biodiversity is direct exploitation -- the killing animals or plants for food, medicine, or, what we are interested in for this project, for animal bodies or body parts.

The problem of wildlife trafficking has become even more difficult with the rise of global marketplaces such as eBay. Civil society groups began tracking the online trade in endangered species in the mid-2000s and have continued to document the sale of animal parts, like ivory, by collecting data using teams of volunteers who manually search the open web. But this data collection is labor intensive, and civil society and enforcement agencies are stretched for resources. So we wanted to try to use computational methods, including AI, to search for potentially illegal wildlife species online -- continuously and without large teams of humans.

Working with Sunandan Chakraborty, a former Moore-Sloan post-doc here at NYU, we developed a supervised machine-learning algorithm that examines commercial sites. We conducted a study that we are just finishing writing up that looked at ~13,000 endangered species, ~100 additional keywords, ~150 sites, over 15 weeks in 2018. From these data we have to determine whether or not the ad likely contains wildlife, and this is where the machine-learning really comes in as we train the tool to distinguish between “ivory wedding dress” and “ivory pendant”, between “plastic gorilla skull” and “gorilla”. I never knew how many “panda cosplay suits” there were in this world before this project. Then we have to try to match the wildlife ad to the level of species. “Zebra pelt” -- this is hard because it could be one of three different species, so again we took a computational approach. Or there are really tricky cases like “leopard shark” and “elkhorn coral”. Once the model returned cleaner results, we looked at the number of ads, the taxonomy of sales, and most important, we found that the major scientific organization that assesses the population status and determines the threats that endangered species face had not established ‘intentional use’ as a threat. This work shows the promise of AI for scaling up efforts to detect and tackle the wildlife trade.