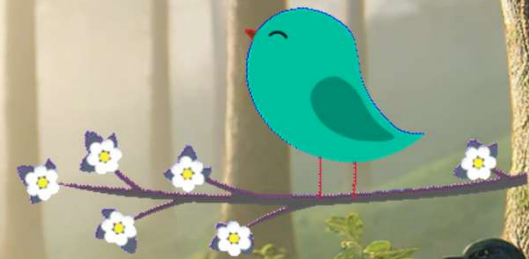


BirdWatching App

Jaqueline Garcia-Yi, Susan Urban, Yong Li, Victoria Okereke



E-115 | Milestone 3 | March 27, 2025

The Problem



Do you know how many bird species exist on our planet? **11,000**

Number of bird species in a national park in Peru: **500**

Number of bird species threaten with extinction: **1 in 8**

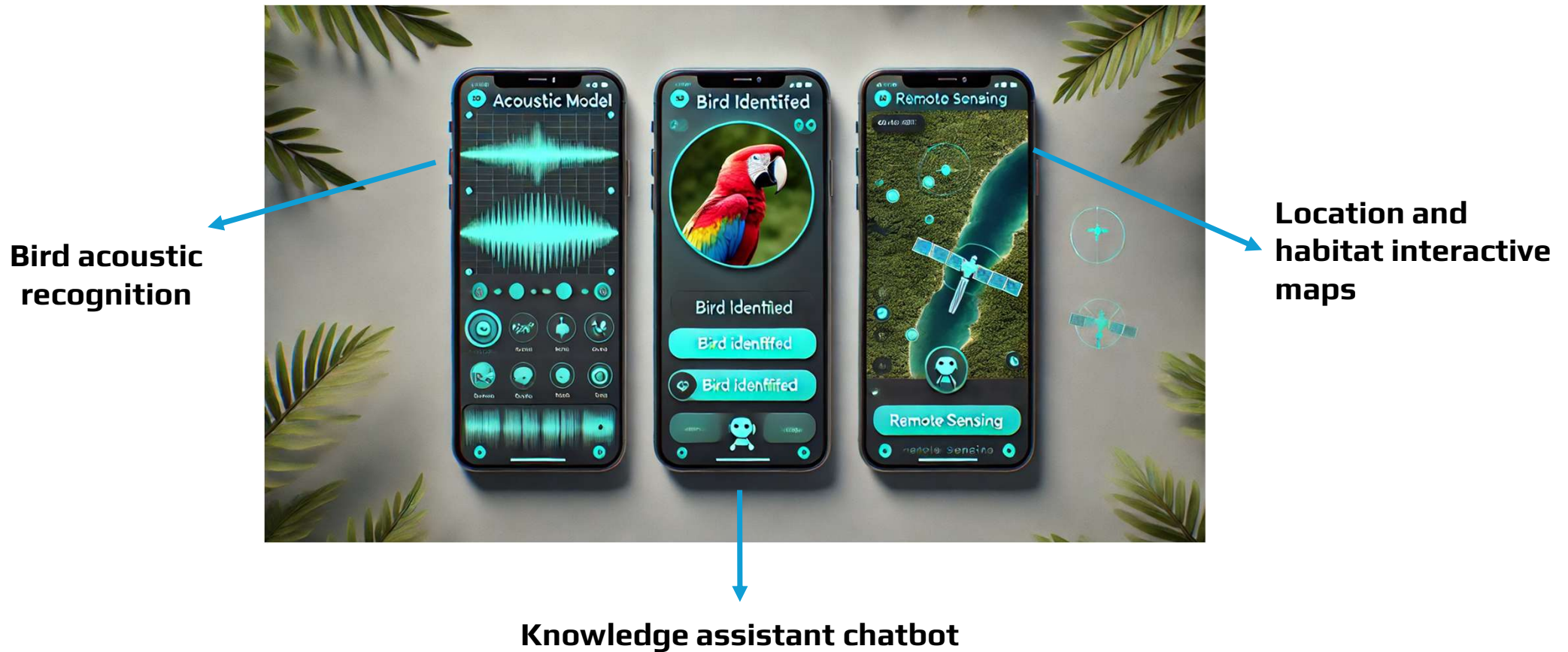
Tourists lack tools to discover and understand birdlife

Indigenous communities in national parks lack resources to protect biodiversity

Target Audience: Eco-Tourists + Communities

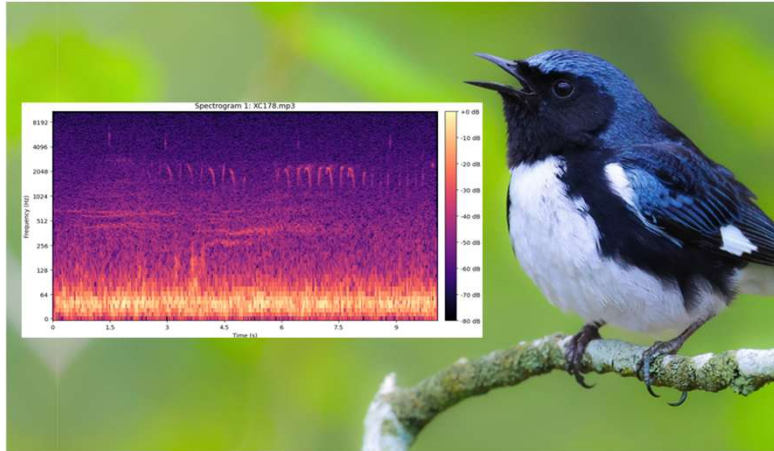


Unique Value Proposition



BirdWatching App: All data in one app for bird-watching eco-tourists

Data



Acoustic Data for Bird identification (Xenocanto repository)

American robin

Article Talk

52 languages

Read Edit View history Tools

From Wikipedia, the free encyclopedia

The **American robin** (*Turdus migratorius*) is a migratory bird of the **true thrush** genus and Turdidae, the wider **thrush** family. It is named after the **European robin**^[3] because of its reddish-orange breast, though the two species are not closely related, with the European robin belonging to the **Old World flycatcher** family. The American robin is widely distributed throughout North America, wintering from southern Canada to central Mexico and along the Pacific coast.

According to the Partners in Flight database (2019), the American robin is the most abundant landbird in North America (with 370 million individuals), ahead of **red-winged blackbirds**, introduced **European starlings**, **mourning doves** and **house finches**.^[4] It has seven subspecies.

The species is active mostly during the day and assembles in large flocks at night. Its diet consists of invertebrates (such as beetle **grubs**, earthworms, and caterpillars), fruits, and berries.^[5] It is one of the earliest bird species to lay its eggs, beginning to breed shortly after returning to its summer range from its winter range. The robin's nest consists of long coarse grass, twigs, paper, and feathers, and is smeared with mud and often cushioned with grass or other soft materials. It is among the earliest birds to sing at dawn, and its song consists of several discrete units that are repeated.

The adult's main predator is the domestic cat; other predators include hawks and snakes. When feeding in flocks, it can be vigilant, watching other birds for reactions to predators. **Brown-headed cowbirds** (*Molothrus ater*) lay their eggs in robin nests (see **brood parasite**), but the robins usually reject the egg.^[6]

Taxonomy [edit]

American robin

Temporal range:
Late Pleistocene – present





Nominate *T. m. migratorius*, male,
Brooklyn, New York



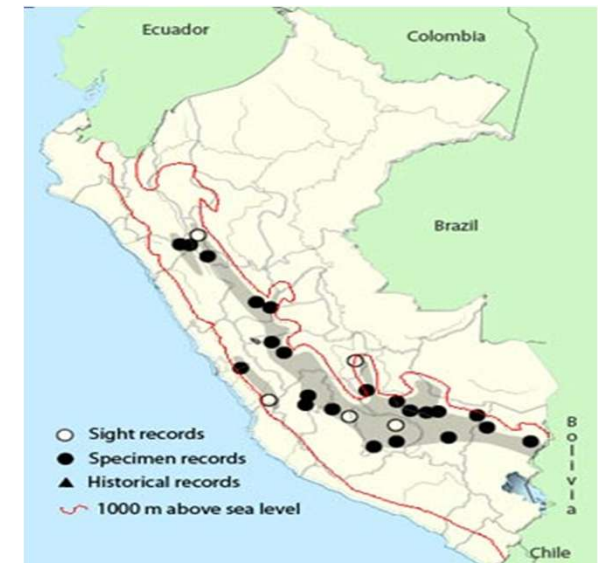
T. m. achusterus, female, Florida

Conservation status

Extinct
Threatened
Least Concern

Least Concern (IUCN 3.1)^[1]

Web Scrapping Text for the LLM and Chatbot

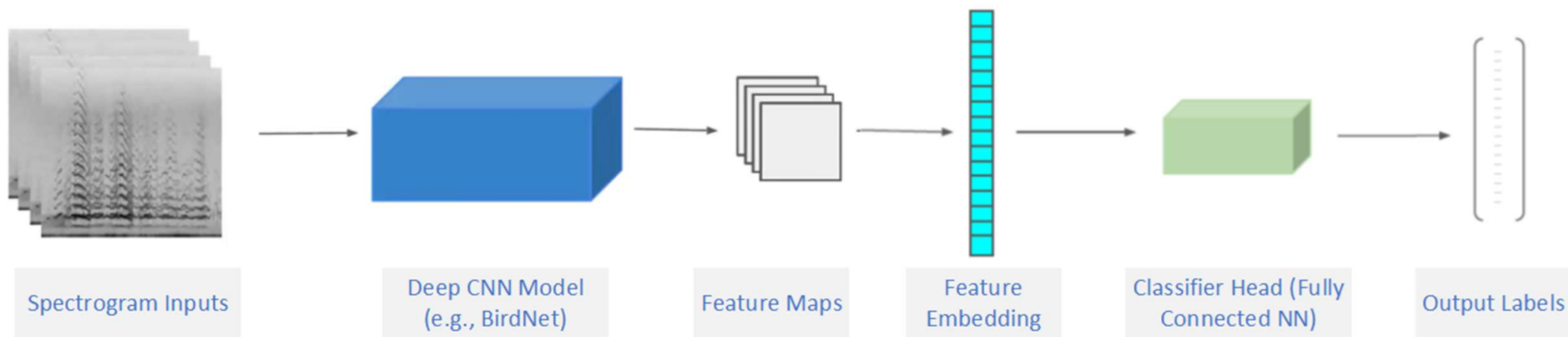


Remote Sensing Satellite Data for Interactive Maps (Google Earth Engine, eBird)

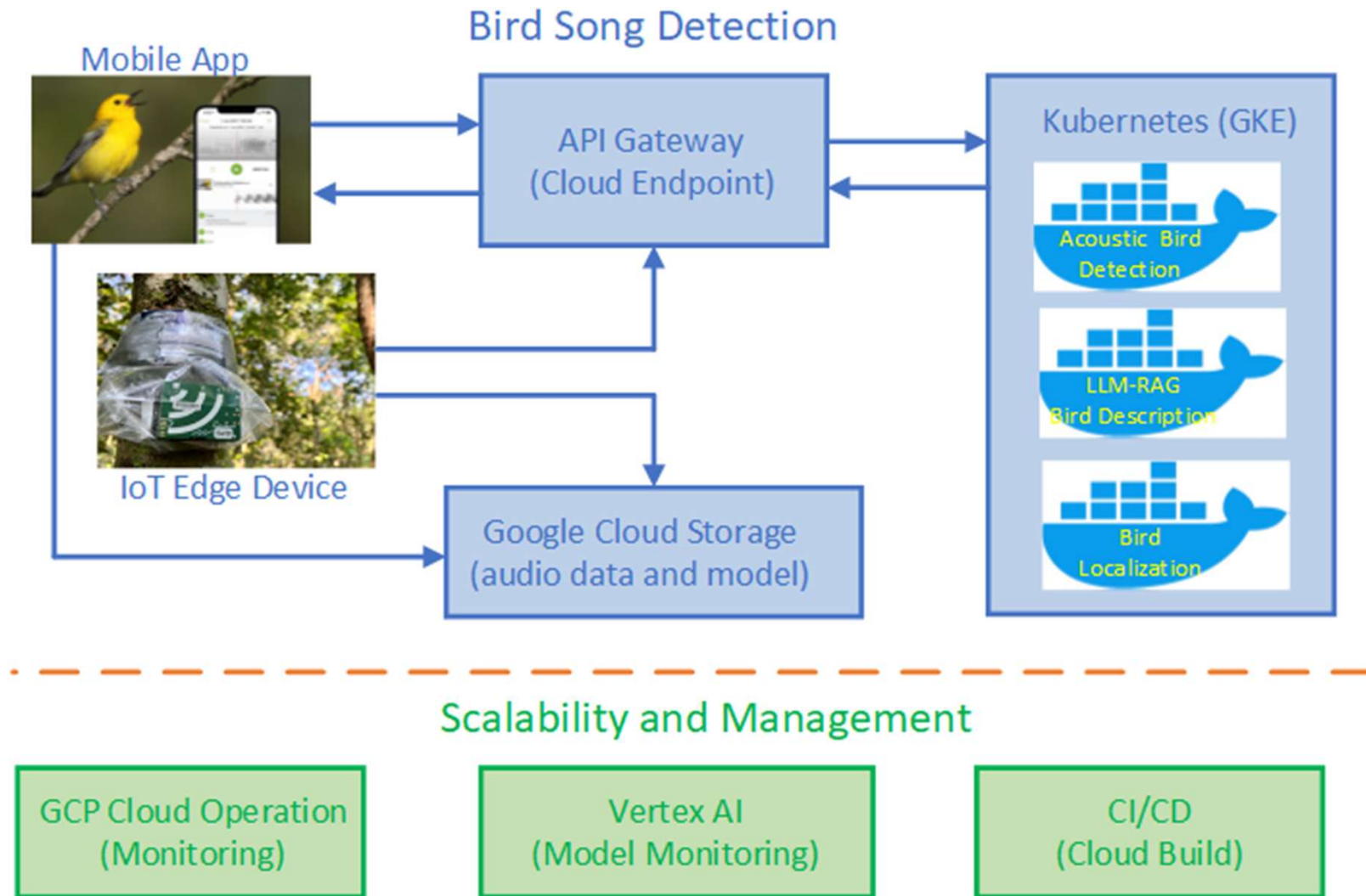
Acoustic Model Efficiency and Optimization

Performance Optimization:

- **Fine Tuning:** Transfer learning by updating the classifier head
- **Infrastructure Choice:** Cloud and/or edge
- **Lite Model v.s. Full Model:** Latency, model size, resource availability trade-offs



Scalability and Infrastructure



Growth Potential

Beyond Birds

Expand recognition to more species to support conservation across ecosystems.



AI + Remote Sensing

Integrate climate & migration data to improve species location prediction.



Multilingual AI Chatbot

Enable tourists and indigenous communities to get info in their own languages.



Ecotourism Market Growth

Average annual growth rate of 15 %



Thank You!



We appreciate your time and interest in our bird-watching app project.

Feel free to explore our references and learn more.



Scan to access project references and resources