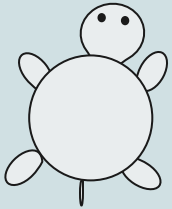


Saving turtles through empowering communities In Kenya

How can communities save more turtles by accessing relevant information

Data Scientists: Rachel, Adel, and Valeria

Agenda

- Understanding Local Ocean Conservation (LOC) educational program and challenges
- Exploring factors influencing the number of turtle capture in Kenya
- Analyzing data on weekly capture, and turtle species
- Providing actionable insights for the LOC educational program to empower local communities

Navigating the Challenges of the LOC Educational Program and Communities to Save More Turtles

Thru the use case of Kenya

LOCAL OCEAN CONSERVATION

- Limited access to information
- Lack of an accurate model
- Fishman desire for incentives
- Need to consider timing and location

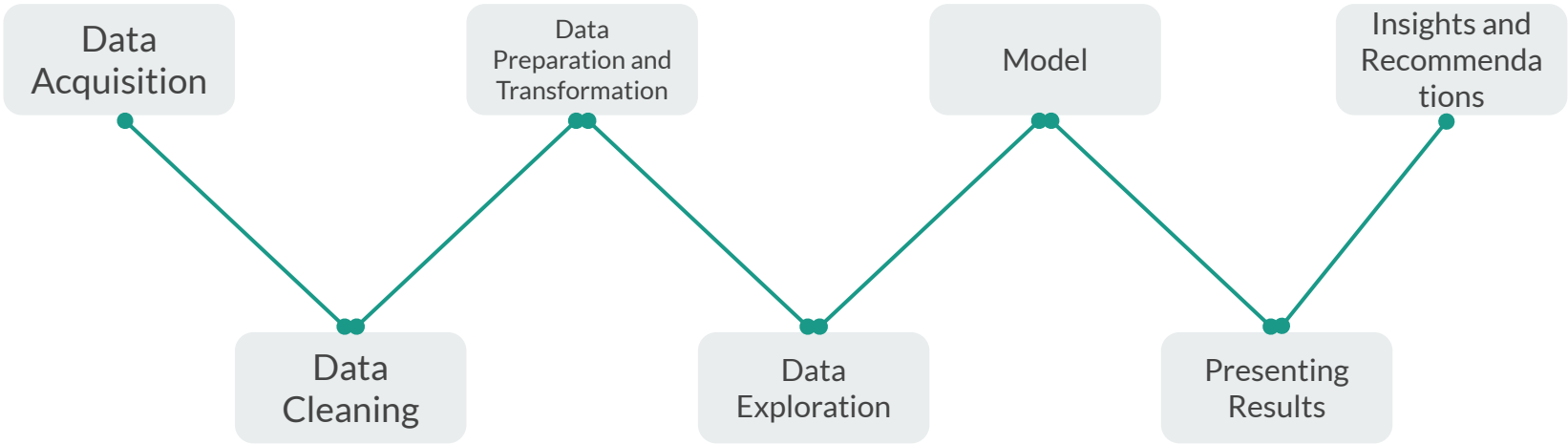
How do various factors affect the number of turtles being captured in Kenya?

Time of the year

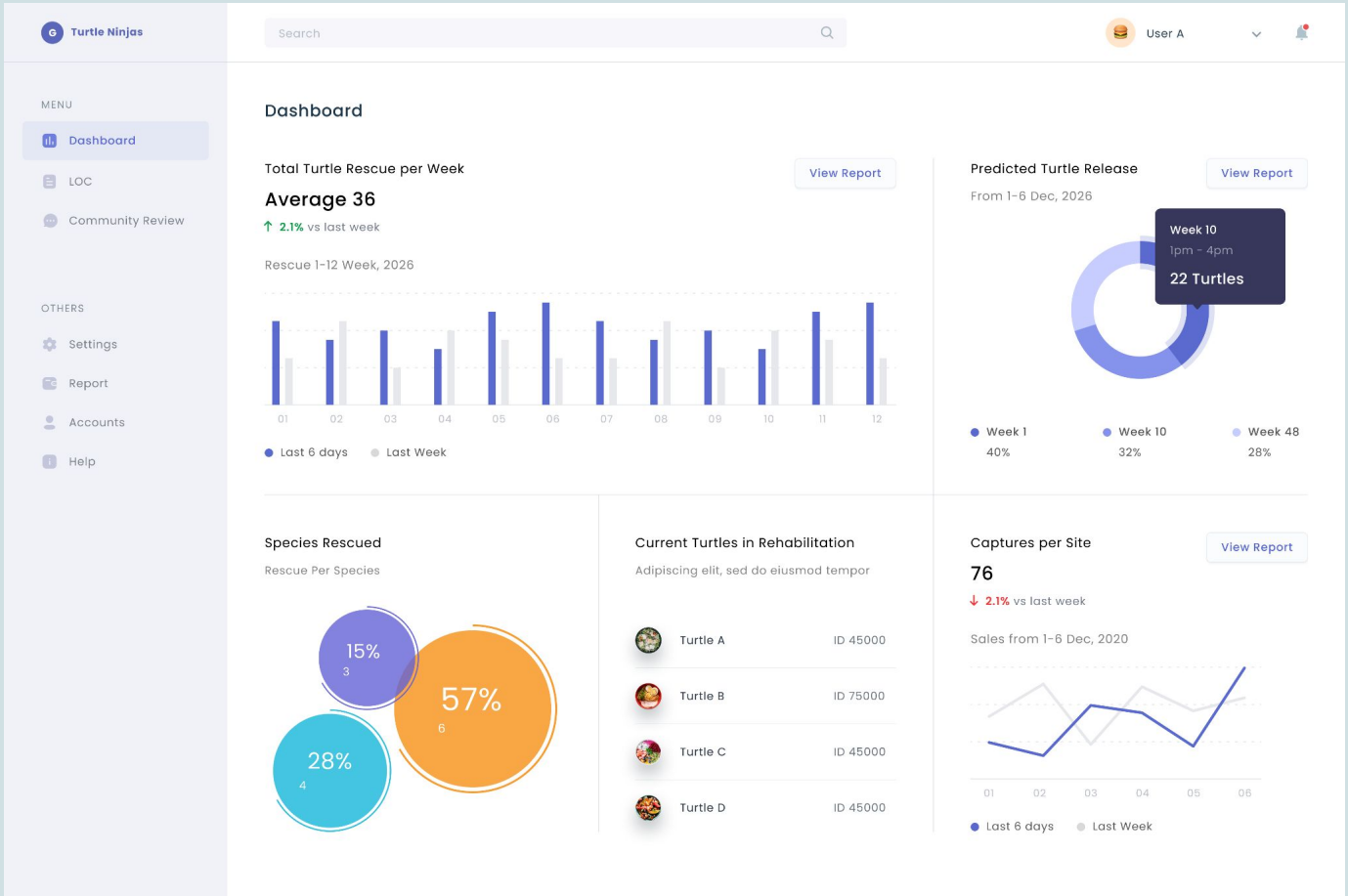
Location of capture

Species and size

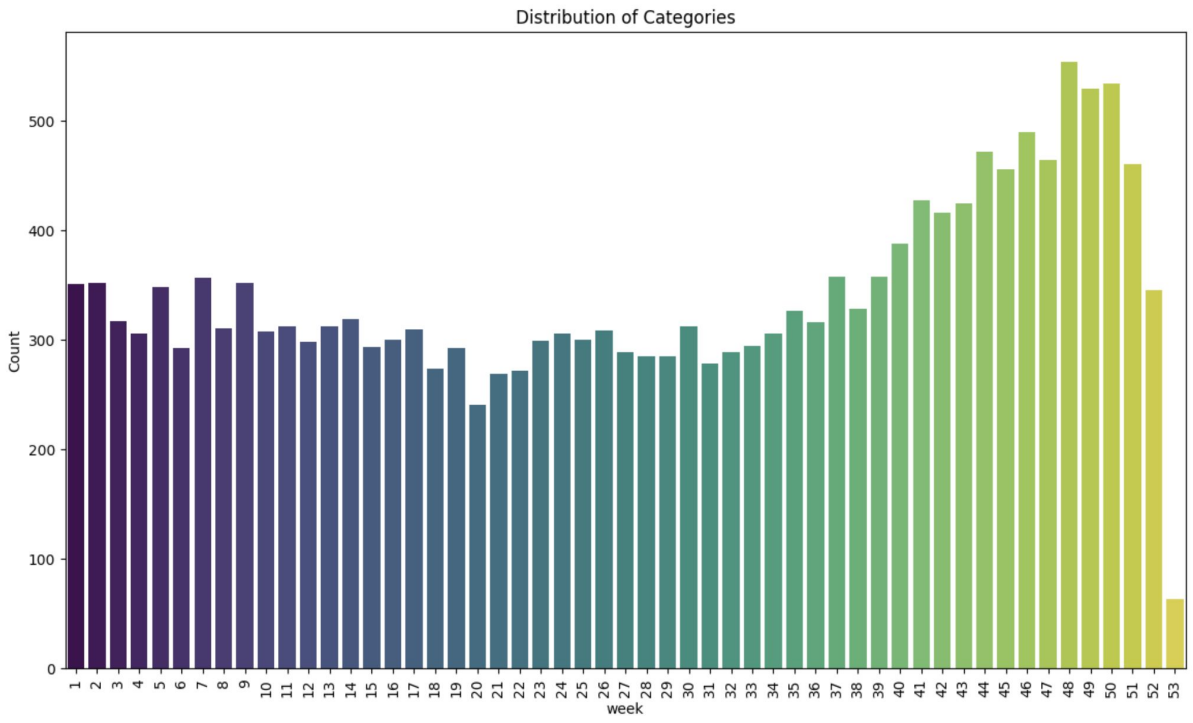
Journey to Insights



Prototype: AI Turtle Rescue Prediction Dashboard



Insight: Time of the Year vs Capture



- Peaks of Capture happens at the end of the year
- Baseline model inspiration

Description: Overall view of total turtles captured from 2008 to 2018

Our Predictive Baseline Model

Objective: Predict the number of turtles caught per site and per week.

Evaluation Metric: Root Mean Squared Error (RMSE)

Description: We predict the future number of turtle captures based on the average number of captures in the same week and site from previous data.

Score: RMSE = 2.88

Ensemble Model

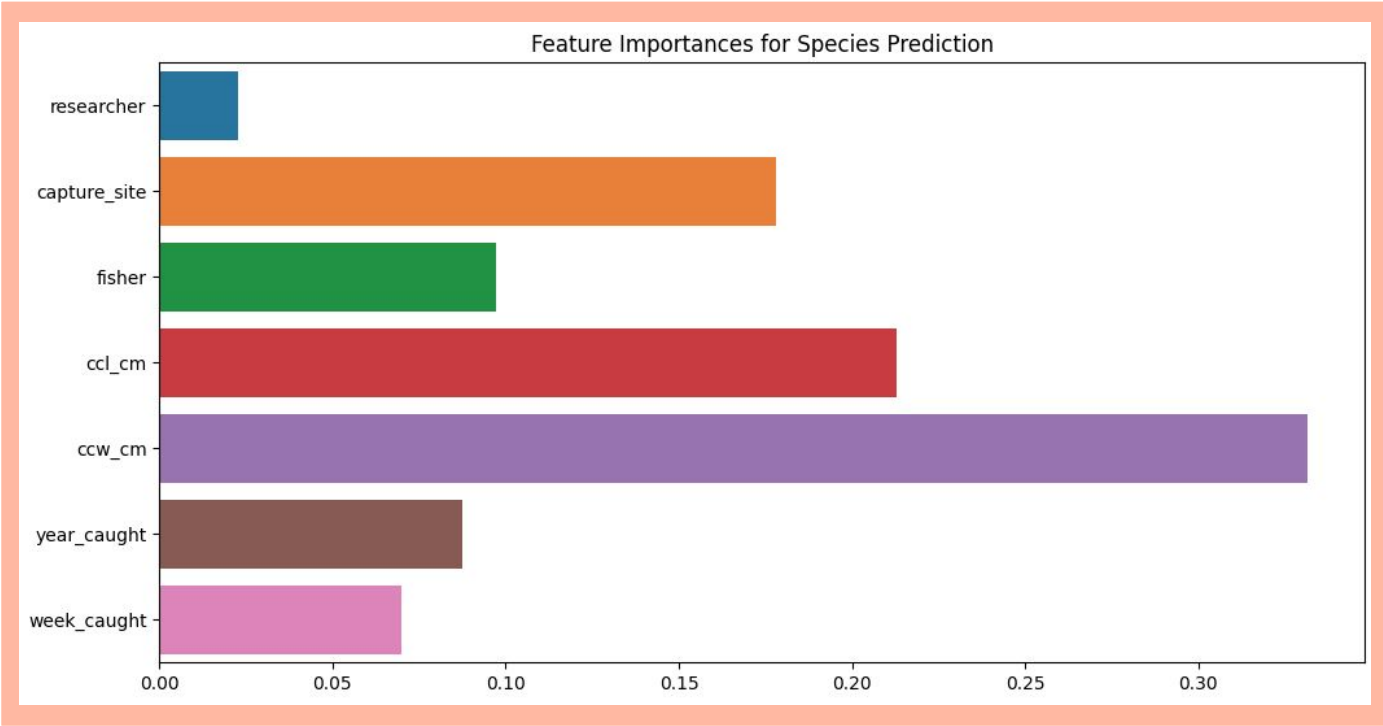
Key Points:

- **Combines Multiple Models:** Uses multiple models to make predictions.
- **Improves Accuracy:** Generally more accurate than individual models.
- **Reduces Overfitting:** Helps to generalize better to unseen data.

Method: Stacking

Score: RMSE = 0.814

Model Inspiration



Description: Bar chart showing the importance of each feature in predicting turtle species

Poisson Regressor Model

Why Did We Use It:

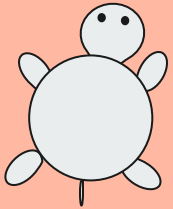
- **Appropriate for Counts: It's specifically designed for count data.**
- **Handles Overdispersion: Can be adjusted to handle overdispersion (when the variance is larger than the mean):**

Description: We predict the future number of turtle captures based on the average number of captures in the same week and site from previous data.

Score: RMSE = 3.57

Benefits of our Prediction Model Dashboard Product

- **Enhanced Information Accessibility:** critical data is easily accessible and comprehensible, enabling stakeholders to make informed decisions quickly.
- **Improved Model Accuracy:** accurate predictions, aiding in effective planning and resource allocation for turtle conservation efforts.
- **Integrated Timing and Location Insights:** understanding of capture patterns, helping to optimize rescue operations based on when and where turtles are most likely to be found.



Thank you