

EcoScan

SCAN.SORT.SUSTAIN.

RECYCLING CAN BE COMPLEX



DIFFERENT RULES, DIFFERENT PLACES

Recycling systems vary across countries and even between cities. What is recyclable in one location may not be accepted in another. This complexity often leads to mistakes and lower recycling rates.

EcoScan helps users navigate local recycling rules. By scanning an item, the app provides clear, location-specific guidance on how to dispose of it correctly.

RECYCLE RIGHT, WHEREVER YOU ARE



HOW IT WORKS (MVP)



01.

DATASET

- 15 recycling classes
- 16k labeled images across categories
- Train/validation split for fine-tuning



02.

MODEL

- ViT google/vit-base-patch16-224 (ImageNet pre-trained)
- Replaced classification head
- Fine-tuned on 16k images (3 epochs)
- Validation Accuracy \approx 99%, no overfitting

03.

SMART HANDLING

- Model outputs prediction + confidence score
- Introduced rejection threshold for low-confidence cases
- Accuracy in known classes \approx 97%
- OOD images \approx 76% rejected

04.

FEATURES

- Clear disposal instructions per class
- “Open in Maps” : Google Maps search URL
- Manual correction of predicted category
- Upload options: camera, drag & drop, or file upload

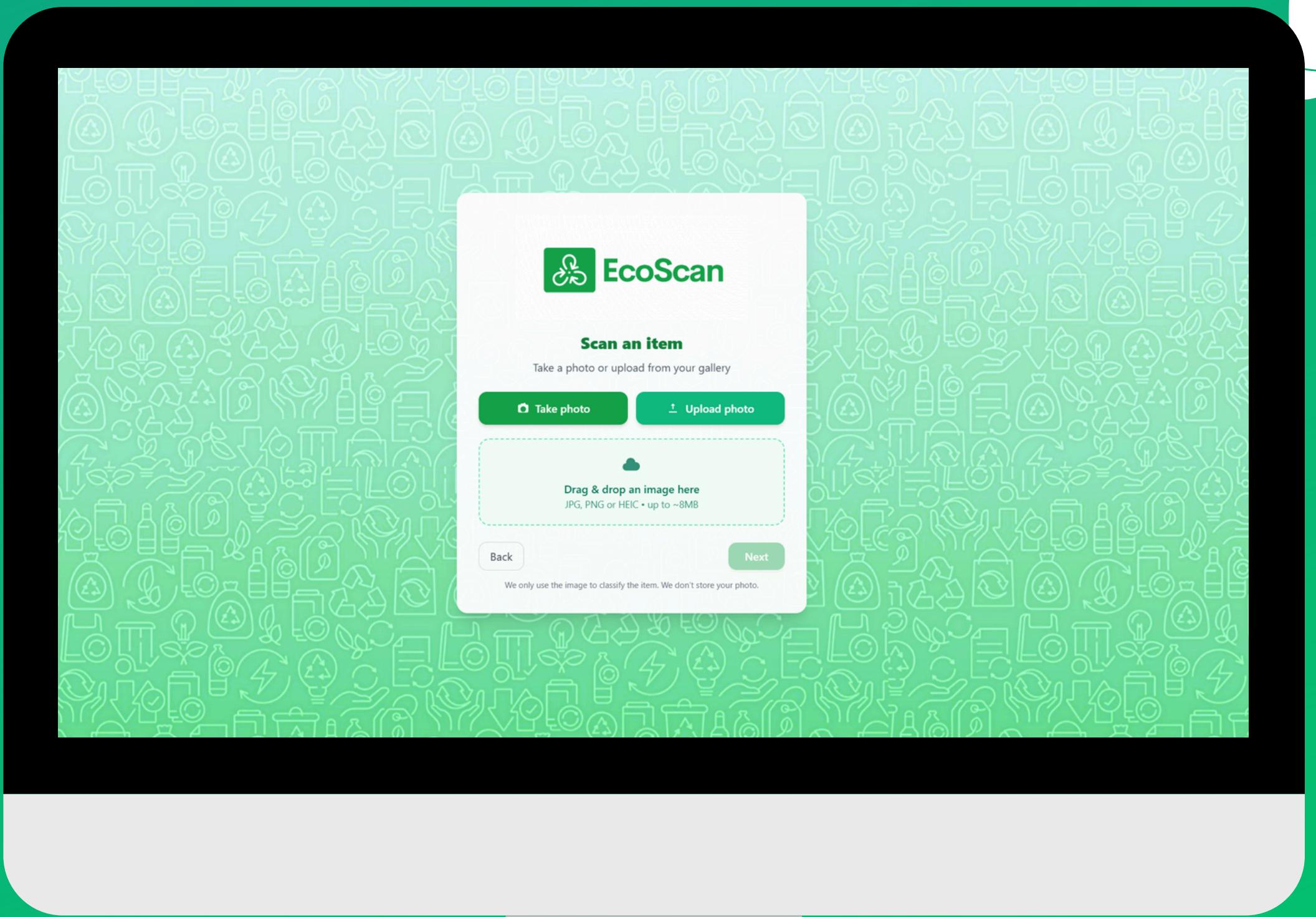
MVP SCOPE

This MVP focuses on Spain's recycling system as a pilot. Future versions could be extended to other countries and regional guidelines.

LIVE DEMO



LET'S SEE ECOSCAN IN ACTION



FUTURE ENHANCEMENTS



MORE CLASSES & COMPLEX MATERIALS

Expand categories to include mixed waste and complex items (e.g., coffee pods)



MULTI-COUNTRY & GEOLOCATION

Adapting guidance to different countries and user's location



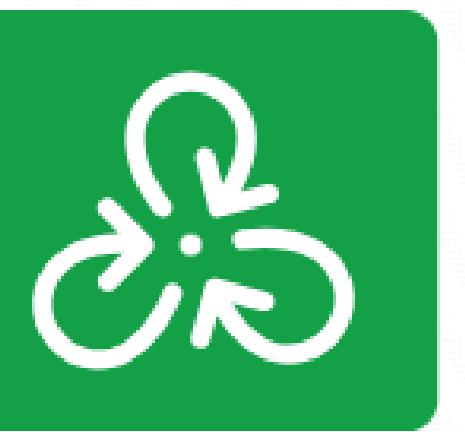
USER FEEDBACK LOOP

Manual corrections stored as valuable data to re-train the model.



REMINDERS & GAMIFICATION

Encourage consistent recycling habits with challenges or rewards.



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