

Catalog QA Product Similarity Demo

A customer-friendly sales preview for packaging similarity, duplicate review, variants, old packaging, and SKU/barcode image QA.

Guided catalog QA assistant

- Answers customer demo questions
- Explains workflow, scores, and thresholds
- Covers duplicates, variants, old packaging, and SKU/barcode cases

Sample catalog workflow

- Use customer sample images
- Include names, SKUs, categories, and barcodes
- Refresh the offline preview for follow-up discussions

B2B catalog review focus

- Not only shopper visual search
- Built for catalog, QA, packaging, and SKU teams
- Clear path from sales preview to real pilot

Customer-facing explanation

“This guided preview helps your team review similar products, understand why items are matched, and discuss whether each case is a duplicate, variant, old package, wrong image, or SKU/barcode catalog issue.”

The Business Problem

Companies manage many product images, SKUs, barcodes, sizes, flavors, and packaging versions.

Similar packages can create duplicate catalog records or QA confusion.

Manual visual checking becomes slow when the catalog grows.

Barcode data alone does not solve visual packaging comparison.

Simple example

Two products may have different barcodes but very similar packaging.

The team needs to know: duplicate, variant, old packaging, or catalog mistake?

Who feels this pain?

Catalog teams

SKU/data teams

QA teams

Packaging teams

Retail/distribution teams

What Makes Product Similarity Different?

Answer when someone says: we already have barcode, ERP, or normal product search

Visual search beyond barcode

Barcode tells you identity.
This system compares how products actually look: packaging, label, shape, and visual similarity.

AI embeddings, not filename matching

Uses CLIP/OpenCLIP image embeddings.
Compares image meaning/features instead of simple text or manual tags.

Vector database search

Stores image embeddings in PostgreSQL + pgvector.
Designed for fast top-match search as the catalog grows.

Search before upload

Find similar products already in the database.
Useful for review and discovery without adding new records.

Duplicate prevention

When uploading a new product, the system can warn about visually similar existing products.
Helps avoid duplicate catalog entries.

Business workflow fit

Built for catalog, SKU, packaging, QA, and ERP/product-data teams.
Can become Android capture app + web dashboard + API integration.

Short answer

The unique value is not “recognizing one product.” It is helping teams review visually similar products, duplicates, variants, and packaging mistakes across a catalog.

The Solution

Upload, select, or capture a product image.

The system converts the image into an AI embedding.

It searches the product catalog using vector similarity.

It returns the closest matching products with scores.

The team reviews duplicates, variants, or possible mistakes faster.

Flow

Product image

AI image understanding

Vector search

Top similar products

Business value

Less manual checking

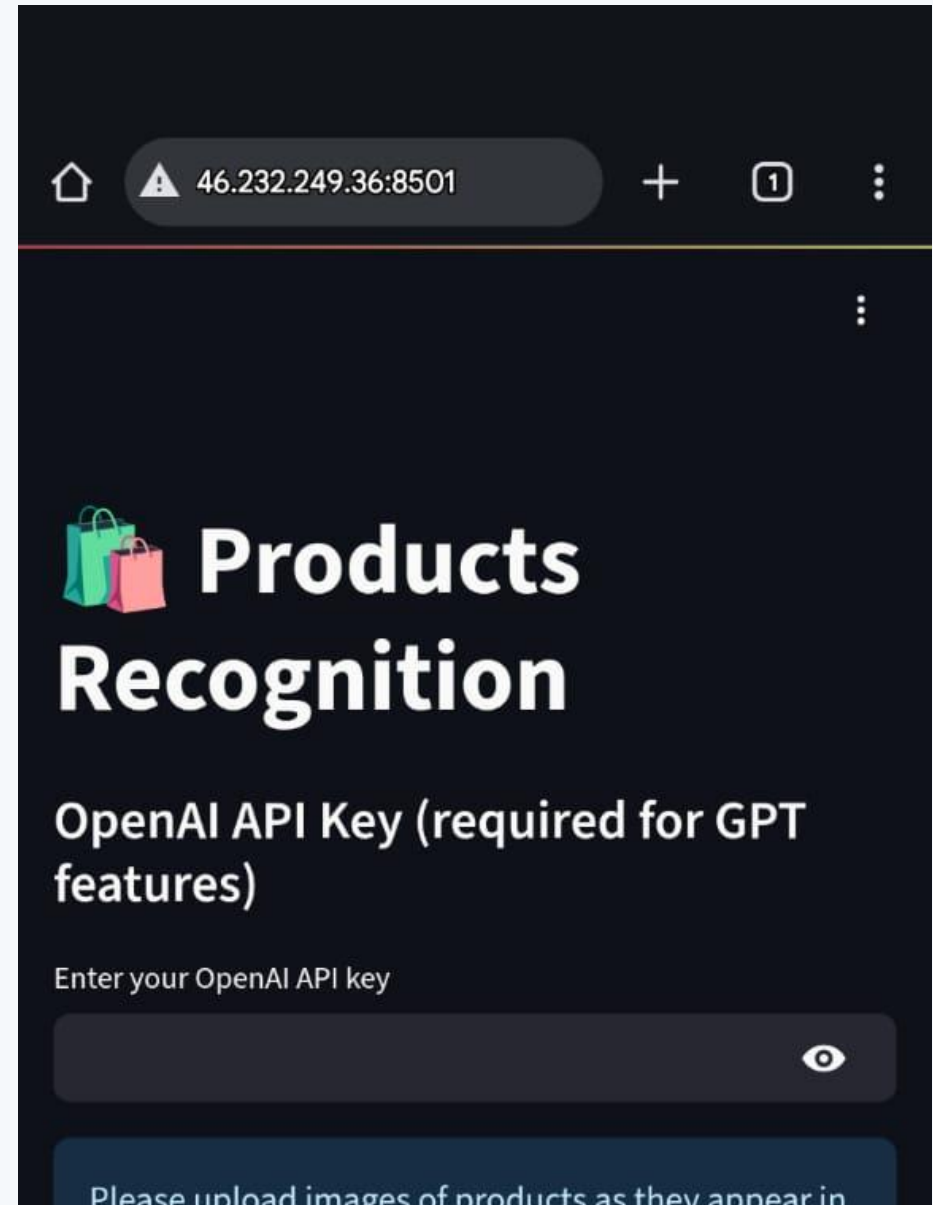
Cleaner catalog data

Faster packaging comparison

Better QA review

Demo Flow

1. Choose or show a reference product.
2. Click “Find Similar Products” or upload/capture an image.
3. Show the top 3 matches.
4. Explain similarity score: higher means visually closer.
5. Connect to value: duplicate, variant, wrong image, or packaging review.



Customer Inquiry Guide

Use these questions to understand fit, workflow, and next step

Customer situation

- Do you manage many SKUs or product images?
- Where do duplicate or visually similar packages cause problems?
- Do teams compare old vs new packaging versions?
- Where do wrong product images appear today?
- Do you need to verify images against barcode or SKU records?

Workflow and next step

- Which systems hold your catalog data today?
- Who owns catalog quality or SKU data?
- Would mobile capture/search help QA, warehouse, sales, or field teams?
- Would a web dashboard help admins review duplicates and export reports?
- For a 100-500 image pilot, what should we detect first?

Close: “Would it make sense to test this with a small sample of your product catalog after the event?”

Suggested Pilot

Use the static preview to explain the workflow; use the pilot to test real customer data.

Pilot idea

- Static demo is a sales preview of the workflow
- Pilot tests 100-500 real customer product images

Customer provides

- Product images and names
- SKU/article numbers
- Barcodes, category, and brand if available
- Examples they want to detect

Pilot deliverables

- Customer sample catalog setup
- Real product images and metadata
- Top 3/top 5 similar matches
- Duplicate/variant review and guided support
- Short findings report

Success criteria

- Finds useful similar products in customer data
- Reduces manual review time
- Identifies confusing product records
- Makes duplicate and old-packaging review clearer
- Shows measurable catalog or QA value

Catalog QA Product Similarity Search

Conversation deck for explaining the demo options while the app is active

Positioning

AI-powered product image matching for catalog quality, packaging comparison, SKU/barcode checks, and QA review teams. The static demo is a sales preview; the pilot should use real customer product images.

30-second pitch

I built a visual product similarity system for companies with many product images, SKUs, barcodes, and packaging versions. It helps teams find duplicate records, valid variants, old packaging, wrong images, and confusing catalog cases faster.

Presenter

Hazem Elbatawy

Full-stack Developer
Security Researcher

Use this as a
conversation guide,
not a formal long
presentation.

Demo Options You Can Show

Static mobile demo

- Fast and reliable at the event.
- Opens on phone browser.
- Best when internet is weak.
- Shows the user flow and business idea.

Live backend demo

- Stronger technical proof.
- Uses deployed app/backend.
- Shows real search behavior.
- Requires stable internet and running server.

Screenshots/video

- Final fallback.
- Useful for quick booth conversations.
- Protects you if venue network is bad.
- Good for follow-up messages.

Product Options for Customers

Android app

Field use and quick checks.
Camera/gallery image capture.
Top similar products on phone.
Best for sales, warehouse, QA, and field staff.

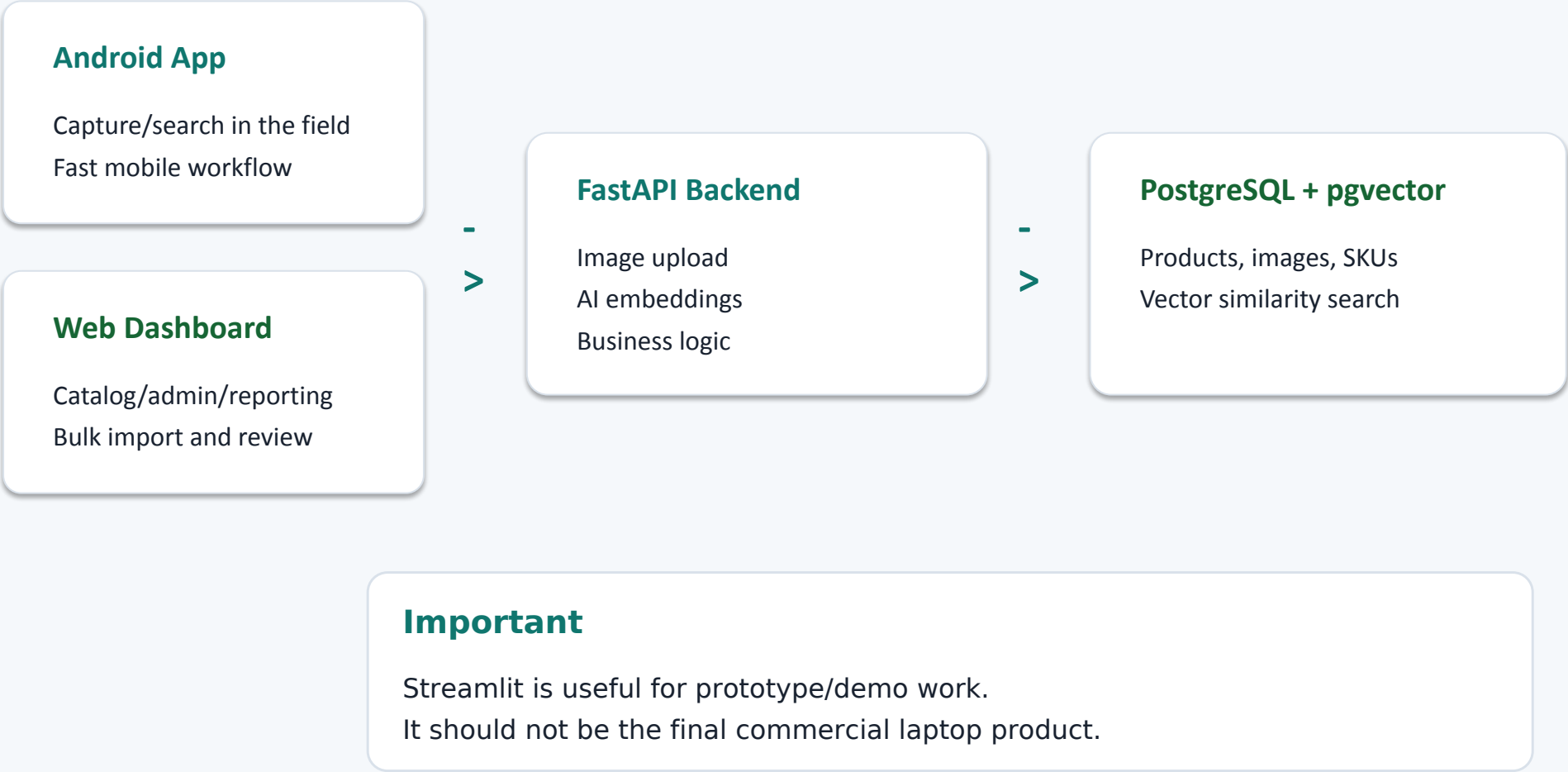
Web dashboard

Catalog and admin work.
Bulk upload products.
Review duplicates and variants.
Export reports for teams.

API integration

Connect to ERP, ecommerce, WMS, or inventory systems.
Keeps existing workflow.
Adds visual search as a service.
Best for mature companies.

Recommended Commercial Architecture



Where It Fits at Fi Africa / ProPak

Packaging and labeling

Compare packaging designs.
Detect similar or duplicate packaging.
Support QA and client review.

Food manufacturers

Manage product variants, flavors, and sizes.
Compare old vs new packaging.
Keep product images consistent.

Distributors and retailers

Clean catalog duplicates.
Verify product images across suppliers.
Improve product search.

Automation / QA companies

Add visual similarity to inspection or traceability workflows.
Strong ProPak MENA fit.

Best first target

Hall 1 / ProPak: packaging, labeling, coding, QA, automation.

Questions to Ask Customers

Do you manage many SKUs or product images?

Do you have duplicate or similar packaging problems?

Do your teams compare old vs new packaging versions?

Do you need to verify product images against barcode/SKU records?

Do you use ERP, ecommerce, WMS, or inventory software?

Who owns product catalog quality in your company?

What you are qualifying

Need for demo

Need for pilot

Need for API integration

Right person for follow-up

Ask for next step

Technical meeting

Sample product images

Pilot discussion

Referral to catalog/QA/IT owner

Technical Foundation

Use only if the customer is technical

Python / FastAPI backend.

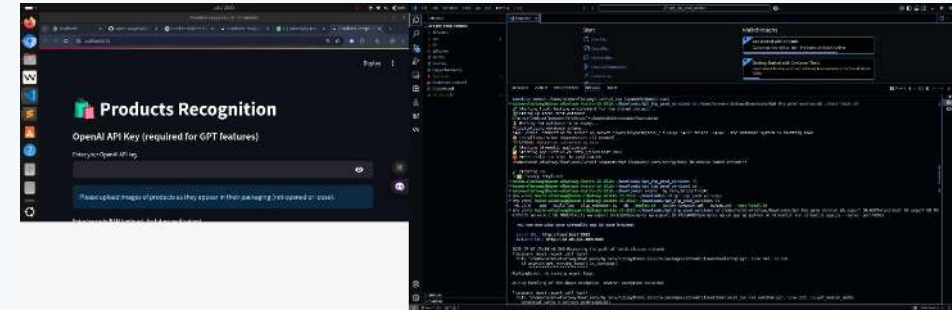
CLIP image embeddings.

PostgreSQL with pgvector for vector search.

Android app for mobile capture/search.

Web dashboard for catalog/admin workflow.

API integration possible with ERP, inventory, and ecommerce systems.



Ecommerce Integration Opportunity

Shopify / WordPress product creation + AI-generated descriptions

Where it connects

Shopify stores.
WordPress / WooCommerce stores.
ERP or product catalog systems.
Internal admin dashboards.

New product workflow

Upload product image.
Check for visually similar existing products.
Prevent duplicate catalog entry.
Generate draft description for review.

OpenAI API value

Generate product title ideas.
Draft product descriptions.
Suggest category/tags.
Create SEO-friendly copy for ecommerce.

Human review required

AI-generated descriptions should be reviewed by the business.
The system should not invent unsupported ingredients, claims, certifications, or nutrition facts.

Commercial benefit

Faster product onboarding.
Cleaner catalog data.
Fewer duplicate listings.
Better product pages for online stores.

Best pitch

“The same visual search can become an ecommerce catalog assistant: check duplicates first, then draft product descriptions for Shopify or WordPress.”