

RetailGen Studio

AI-Powered Retail Media Creative Builder

Hackathon Submission

The Problem

Retail media creatives must follow complex retailer and brand rules while supporting many ad formats.

Today advertisers face:

- Expensive agencies
- Manual design and approval cycles
- High risk of ad rejection
- No automated compliance checking

Small advertisers are especially affected.

Hackathon Challenge

Retailers like Tesco enforce rules such as:

- No prices, discounts, claims or sustainability text
- Mandatory safe zones for Stories (9:16)
- Specific tags and logos
- Accessibility and contrast rules

These rules are long, ambiguous and not machine-readable.

Our Solution: RetailGen Studio

RetailGen Studio is an AI-powered creative builder that:

- Lets users design visually
- Uses AI to generate backgrounds
- Removes product backgrounds
- Validates creatives automatically
- Prevents non-compliant exports

It combines creativity with retailer safety.

What Users Can Do

In one platform users can:

- Upload packshots
- Generate AI backgrounds
- Add text and logos
- Choose social and display sizes
- Check compliance
- Auto-fix violations
- Download ready-to-use ads

AI Compliance Engine

Our backend converts legal rules into AI checks using:

- EasyOCR to read text inside images
- Regex rules to detect banned words
- OpenCV to analyze layout
- Safe-zone detection for Stories

This prevents illegal or rejected creatives.

Key AI Capabilities

- Flux AI generates professional product backgrounds
- rembg removes image backgrounds
- AI auto-fixes layout violations
- OCR detects claims, prices, competitions, and more

The system ensures compliance without blocking creativity.

Frontend (Next.js + Fabric.js)

- Visual editor
- Safe-zone overlays
- Export controls

Backend (FastAPI)

- OCR scanning
- Compliance engine
- AI background and cut-outs

Why This Is Innovative

RetailGen Studio is not just a design tool:

- It turns legal rules into executable AI
- Prevents illegal ads from being exported
- Supports multi-format, multi-retailer campaigns
- Removes agency dependency

Impact & Future

RetailGen Studio enables:

- Faster campaign launches
- Lower creative cost
- Zero compliance risk
- Scalable retail advertising

Future:

- Multi-retailer rule engines
- Auto-generated campaigns
- Collaborative workflows