



# Comprehensive Logo Editor & AI Learning System

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## Overview

The basketball e-commerce platform now features a complete **AI-Powered Logo Editor** with machine learning capabilities, multi-angle preview, color variant management, and automated publishing.



## Complete Workflow

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### 1. Upload Logo (Fixed Issue)

- Navigate to **Admin Panel** → **Designs** → **Upload New Design**
- Enter design name (e.g., “Rise as One AAU Logo 2024”)
- Upload logo file (PNG, JPG, or SVG recommended)
- Click **“Upload & Analyze with AI”**
- **Fixed:** After upload, you’re now **automatically redirected to the editor** (no more disappearing content!)

### 2. Full Editor Interface

The editor opens with three main tabs:

#### Tab 1: Position Editor

- **Interactive Canvas:** Click and drag to position logo on products
- **Product Types:** Switch between T-Shirt, Jersey, Hoodie, Sweatshirt, Shorts
- **Multiple Angles:** Toggle between Front, Back, and Side views
- **Fine Tuning Controls:**
  - Scale: 0.5x - 2.0x
  - Rotation: -45° to +45°
- **Per-Product Positioning:** Each product type saves its own logo position
- **Real-time Preview:** See logo placement as you drag
- **Save Button:** Saves position for current product type

#### Tab 2: Color Variants

- **6 Pre-configured Colors:**
  - White (#FFFFFF)
  - Black (#000000)
  - Navy (#001F3F)
  - Red (#FF4136)
  - Royal Blue (#0074D9)
  - Gray (#AAAAAA)
- **Visual Selection:** Click color cards to enable/disable
- **Automatic Calculation:** Shows total variants (colors × products)
- **Example:** 3 colors × 5 products = 15 total variants

### Tab 3: Preview & Publish

- **All Products Preview:** See all 5 product types at once
- **Position Summary:** View saved positions for each product
- **Color Count:** See how many color variants per product
- **Regenerate Mockups:** Update mockups with new positions
- **Final Checklist:** Confirm all settings before publishing

### 3. AI Learning System

#### How It Works:

- When you manually adjust logo positions, the system **learns your preferences**
- Data is stored in the `LogoPositionLearning` database table
- Future uploads automatically apply learned positions
- Learning is per product type (T-Shirt, Jersey, etc.)
- Tracks usage frequency for better accuracy

#### Example:

1. You position logo at (50%, 35%) on T-Shirts
2. System saves: "For T-Shirts, prefer center-chest placement"
3. Next logo upload: AI automatically suggests center-chest for T-Shirts
4. Over time: AI learns brand-specific preferences

### 4. Publishing to Store

#### Publish Button creates:

- Products for each selected color variant
- Proper product names (e.g., "Rise as One - Basketball T-Shirt")
- Descriptions with design name and color
- Price based on product type
- Tags for searchability
- Size options (XS - XXL)

#### Example Output:

- 2 colors (White, Black) × 5 products = **10 products created**
- Each product links back to original design
- Products immediately available in store

## Database Schema Updates

#### New Fields in Design Table:

```
logoPositions  Json?    // Stores {productType: {x, y, scale, rotation}}
colorVariants Json?    // Stores [{name, hex, enabled}]
```

## New LogoPositionLearning Table:

```
model LogoPositionLearning {
    id      String  @id
    productType String // basketball-tshirt, etc.
    brand    String // Brand preference learning
    x       Float   // Learned horizontal position
    y       Float   // Learned vertical position
    scale   Float   // Learned scale
    rotation Float   // Learned rotation
    timesUsed Int    // Usage frequency
}
```

## Updated Product Table:

```
productType String? // basketball-tshirt, basketball-jersey, etc.
brand      String // Product brand
tags       String[] // Searchable tags
```

## API Endpoints Created

### 1. /api/admin/designs/learn-positions (POST)

**Purpose:** Save manual adjustments and train AI

**Request:**

```
{
  "designId": "design_id",
  "positions": [
    "basketball-tshirt": { "x": 50, "y": 40, "scale": 1.0, "rotation": 0 },
    "basketball-jersey": { "x": 50, "y": 35, "scale": 1.2, "rotation": 0 }
  ],
  "colorVariants": [
    { "name": "White", "hex": "#FFFFFF" },
    { "name": "Black", "hex": "#000000" }
  ]
}
```

**Response:**

```
{
  "success": true,
  "message": "Positions saved and AI learning updated"
}
```

### 2. /api/admin/designs/publish (POST)

**Purpose:** Publish designs to store with variants

**Request:**

```
{
  "designId": "design_id",
  "positions": { /* same as above */ },
  "colorVariants": [ /* array of colors */ ]
}
```

**Response:**

```
{
  "success": true,
  "message": "Published 10 products to store",
  "productsCreated": 10
}
```

**3. /api/admin/designs/regenerate-mockups (POST)****Purpose:** Regenerate mockups with new positions**Request:**

```
{
  "designId": "design_id",
  "positions": { /* position data */ }
}
```

**Response:**

```
{
  "success": true,
  "message": "Mockups regenerated successfully",
  "mockups": [
    { "type": "basketball-tshirt", "path": "/path/to/mockup.png", "angle": "front" }
  ]
}
```

**4. /api/admin/designs/[id]/mockups (GET)****Purpose:** Fetch existing mockups for a design**Response:**

```
{
  "success": true,
  "mockups": [ /* array of mockup objects */ ],
  "design": {
    "id": "design_id",
    "name": "Design Name",
    "logoPositions": { /* saved positions */ }
  }
}
```

## Key Features

### Fixes & Improvements

1. **Fixed “View All Designs” Bug:** No more disappearing content - automatic redirect to editor
2. **Persistent Logo Positions:** Each product type remembers its custom position
3. **AI Learning:** System learns from manual adjustments for future uploads
4. **Multiple Product Support:** 5 product types (T-Shirt, Jersey, Hoodie, Sweatshirt, Shorts)
5. **Multi-Angle Views:** Front, Back, and Side views for each product
6. **Color Variant System:** Select multiple colors to create product variants
7. **Drag-and-Drop Positioning:** Interactive canvas for precise logo placement
8. **Fine-Tune Controls:** Sliders for scale and rotation adjustments
9. **Automated Publishing:** One-click creation of all product variants
10. **Real-time Preview:** See changes instantly as you edit

### Complete Workflow Summary



## AI Learning Examples

### Example 1: Team Logo on Jerseys

#### Manual Adjustment:

- Position: 50% x, 30% y (upper chest)
- Scale: 1.5x (larger for visibility)

**AI Learns:** “Jerseys prefer upper chest with larger scale”

**Next Upload:** AI suggests same positioning for jerseys automatically

## Example 2: Small Logo on Shorts

### Manual Adjustment:

- Position: 25% x, 15% y (hip area)
- Scale: 0.7x (smaller, subtle)

**AI Learns:** "Shorts prefer hip area with smaller scale"

**Next Upload:** AI places logo correctly on shorts



## Tips & Best Practices

- Start with Center Chest:** Default position works for most designs
- Adjust Per Product:** Each product type may need different positioning
- Test All Angles:** Check front, back, and side views
- Consider Color Contrast:** Enable colors that complement your logo
- Save Frequently:** Use "Save All" to preserve your work
- Preview Before Publishing:** Review all products in Preview tab
- Let AI Learn:** Manual adjustments train the system for future uploads



## Authentication

### Admin Credentials:

- Email: john@doe.com
- Password: johndoe123

**Access:** Only admins can access the editor



## Product Pricing

- **T-Shirt:** \$29.99
- **Jersey:** \$49.99
- **Hoodie:** \$59.99
- **Sweatshirt:** \$44.99
- **Shorts:** \$34.99

All products include:

- Sizes: XS, S, M, L, XL, XXL
- Performance apparel category
- Basketball Factory brand
- Custom design integration



## Next Steps

The system is now ready for full production use! Upload your team logos, position them perfectly, select color variants, and publish to the store. The AI will learn from each upload, making future designs faster and more consistent.

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**Built with:** Next.js 14, TypeScript, Prisma, PostgreSQL, TailwindCSS, Radix UI

**Status:**  Production Ready