

Smart Design Generator - Deep Dive

Let me break down how this feature would work from both user experience and technical architecture perspectives.

User Flow & Experience

Input Methods

Method 1: Product URL

User pastes: `https://example.com/products/organic-green-tea`

AI automatically:

- Scrapes product images, title, description, price
- Extracts brand colors from website
- Identifies product category (beverage/health)
- Generates multiple creative variations

Method 2: Text Description

User types: "Promoting our new organic green tea blend. It has matcha and helps with focus. Price \$24.99"

AI generates creatives with:

- Stock images/AI-generated product visuals
- Copy variations emphasizing different benefits
- Platform-optimized layouts

Method 3: Image Upload + Brief

User uploads product photo + adds context
AI enhances and adapts the image for each platform

Platform-Specific Creative Generation

Instagram Feed Post (1080x1080)

Layout Variations Generated:

1. **Minimalist Product Focus**
 - Clean white/brand background
 - Product centered with subtle shadow

- Price tag in corner
- 1-2 line benefit statement
- "Shop Now" CTA button

2. **Lifestyle Context**

- Product in use scenario (AI-composed)
- Person holding tea cup (stock photo matched to brand aesthetic)
- Overlay text with key benefit
- Soft gradient background

3. **Text-Heavy Educational**

- Bold headline: "3 Reasons to Switch to Organic Tea"
- Bullet points with icons
- Product image in corner
- Brand colors throughout

AI Decision Logic:

- Analyzes successful posts in "tea" category
- Checks if account historically performs better with product-focused vs. lifestyle
- Considers seasonality (summer = iced tea visuals)

Instagram Stories (1080x1920)

Auto-Generated Elements:

1. **Slide 1: Hook**

- Full-screen product video/cinemagraph
- "Swipe up to discover" text
- Poll sticker: "Morning tea person? ☕"

2. **Slide 2: Problem/Solution**

- Split screen: "Tired afternoon?" | "Natural focus boost"
- Animated text revealing benefits
- GIF of steam rising from cup

3. **Slide 3: Social Proof**

- Pulls 5-star reviews from website
- Customer testimonial cards
- "Join 10K+ happy customers" text

4. **Slide 4: CTA**

- Countdown timer sticker (if running promo)
- Link sticker to product page
- Discount code displayed prominently

Interactive Elements Added:

- Quiz: "What's your tea personality?"
- Rating slider: "How important is organic to you?"
- Question sticker for engagement

Facebook Carousel (1080x1080 per card)

****5-Card Sequence Auto-Created:****

****Card 1: Brand Introduction****

- Logo + brand mission statement
- "Organic, Sustainable, Delicious" tagline
- Soft brand color background

****Card 2: Product Hero Shot****

- Main product image enhanced
- Key benefit headline
- Price + "Limited Time" badge

****Card 3: Ingredients/Features****

- Visual breakdown of tea blend components
- Icons for each ingredient (matcha, green tea, etc.)
- "100% organic" certification badge

****Card 4: Benefits Grid****

- 4 icons with benefits (energy, focus, antioxidants, taste)
- Each with micro-copy
- Clean, scannable layout

****Card 5: Offer + CTA****

- "20% OFF Your First Order"
- Discount code in large text
- "Shop Now" button
- Trust badges (money-back guarantee, free shipping)

****Copy Variations (AI generates 3 versions):****

- Benefit-focused: "Boost your focus naturally with..."
- Urgency-driven: "Last chance: 20% off organic green tea..."
- Story-based: "From farm to cup, discover the journey..."

**Google Display Ads (Multiple Sizes)**

****Banner Sizes Auto-Generated:****

- 300x250 (Medium Rectangle)
- 728x90 (Leaderboard)
- 160x600 (Wide Skyscraper)
- 320x50 (Mobile Banner)
- 300x600 (Half Page)

****Design System Applied:****

****Version A: Direct Response****

^^^

[Product Image - 40% of space]

"Premium Organic Green Tea"

"Focus • Energy • Wellness"

Price: \$24.99 → \$19.99
[BUY NOW button - brand color]
...

****Version B: Brand Awareness****
...
[Lifestyle image - full bleed]
Overlay text: "Start Your Day Right"
Logo in corner
"Discover Our Tea Collection →"
...

****Version C: Retargeting****
...
"Still thinking about that tea?"
[Product you viewed thumbnail]
"Get 15% off if you order today"
[Urgency timer: 2:34:18 remaining]
...

****Responsive Behavior:****
- Text size adjusts per banner dimension
- CTA button always prominent
- Logo always visible
- High contrast ensured for readability

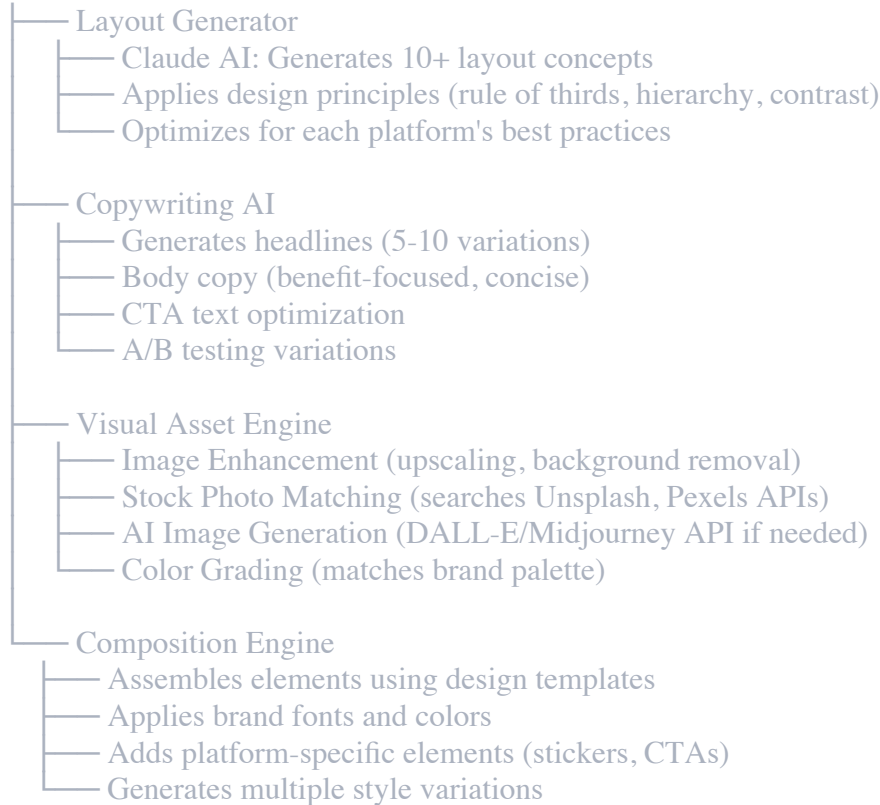
Technical Architecture

****Backend System Flow****
...

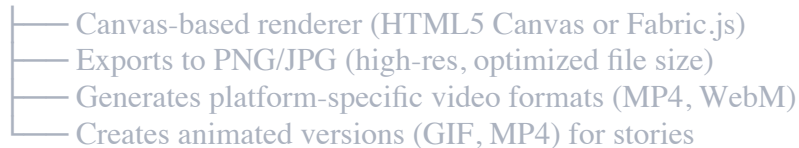
1. INPUT PROCESSING



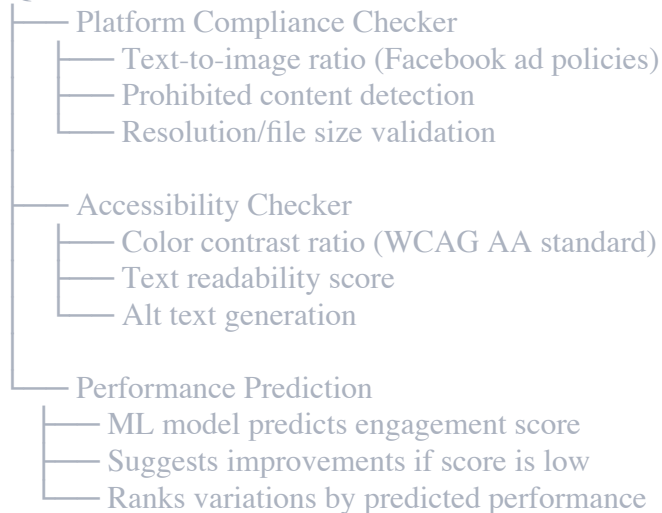
2. AI CREATIVE ENGINE



3. RENDERING SYSTEM



4. QUALITY ASSURANCE



...

AI Models & APIs Used

1. Large Language Models (LLM)

- **Claude Sonnet/GPT-4**: Headline and copy generation
- **Fine-tuned model**: Trained on high-performing ad copy in user's industry

2. Computer Vision

- **Background removal**: Remove.bg API or self-hosted U²-Net
- **Image enhancement**: Real-ESRGAN for upscaling
- **Object detection**: YOLO for identifying product in images
- **Color extraction**: ColorThief.js or custom k-means algorithm

3. Generative AI

- **Image generation**: DALL-E 3 or Stable Diffusion for missing assets
- **Style transfer**: Apply brand aesthetic to stock photos

4. Recommendation Engine




- **Collaborative filtering**: "Users like you performed best with layout style X"
- **Content-based filtering**: "Similar products succeed with these color schemes"

User Interface Design

Generation Wizard (3 Steps)

Step 1: Input

...

Generate Ad Creatives	
 Product URL [paste URL here _____]	
OR	
 Describe your product [text area _____]	
 Upload product image (optional) [drag & drop zone]	
[Continue →]	

...

Step 2: Customize

...

AI found this info:	
Product: Organic Green Tea Blend	

Smart Features & Intelligence

1. Learning System

```
javascript
// Tracks performance and learns preferences
{
  "user_id": "12345",
  "industry": "food_beverage",
  "winning_patterns": {
    "color_schemes": ["#2C5F2D + white", "#97BC62 + black"],
    "layouts": ["product_centered", "lifestyle_context"],
    "copy_style": "benefit_focused_short",
    "cta_performance": {
      "Shop Now": 3.2,
      "Buy Today": 2.8,
      "Learn More": 1.9
    }
  },
  "engagement_by_time": {
    "instagram": {"9am": 0.045, "6pm": 0.082},
    "facebook": {"12pm": 0.031, "8pm": 0.067}
  }
}
```

2. Dynamic Content Adaptation

Seasonal Adjustments:

- Summer: Iced tea visuals, beach lifestyle scenes
- Winter: Warm tones, cozy indoor settings
- Holiday seasons: Festive colors, gift messaging

Audience Targeting Variants:

- Young professionals: Focus benefit (productivity)
- Health enthusiasts: Organic certification, wellness
- Budget-conscious: Value proposition, price emphasis

3. Brand Consistency Engine

First-time user:

- | | | |
|---|---|------------------------------------|
| 1 | 1 | AI analyzes website/uploads |
| 2 | 2 | Creates brand profile |
| 3 | 3 | Generates brand guideline document |

Returning user: 4. All future creatives auto-match brand standards 5. Prevents off-brand designs 6. Suggests brand evolution opportunities

API Integration Examples

For E-commerce Platforms

Shopify Integration:

```
javascript
// Auto-generate ads for new products
POST /api/generate-creative
{
  "product_id": "shopify_12345",
  "platforms": ["instagram_feed", "facebook_carousel"],
  "campaign_objective": "product_launch",
  "auto_schedule": true,
  "schedule_times": ["optimal"] // AI picks best times
}

// Response includes generated creatives + scheduled posts
WooCommerce Webhook:
```

```
javascript
// Triggered when product is added
{
  "event": "product.created",
  "action": "generate_launch_campaign",
  "include_platforms": "all",
  "budget_allocation": "auto"
}
```

Pricing for This Feature

Included in Plans:

- | | | |
|---|---|---|
| • | • | Starter: 10 AI-generated creatives/month |
| • | • | Professional: 100 creatives/month |
| • | • | Business: 500 creatives/month |
| • | • | Enterprise: Unlimited |

Add-on Credits:

- | | | |
|---|---|---|
| • | • | Additional 50 creatives: \$10 |
| • | • | Video creatives (30-sec): \$5 per video |
| • | • | Premium stock photos: \$2 per image |
| • | • | AI model fine-tuning on brand: \$299 one-time |