



Gen AI Exchange Hackathon by Google

ADMater AI

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Problem Statement#9 : Big Basket

AI-Powered Dynamic Banner and Video Generation for Promotions: Develop an AI solution that revolutionizes promotional content creation.

Given :

1. Product Images: Multiple images showcasing the same or different products.
2. Promotional Offer: Details of the sale, discount, or special offer.
3. Color Palette: A set of colors to maintain brand consistency.
4. Theme: Festive or event-based themes (e.g., Diwali, Independence Day).
5. Output Specifications: Desired size, resolution, format (banner or video).

The AI should generate high-quality banners and/or videos tailored to the provided inputs. The ideal solution will be:

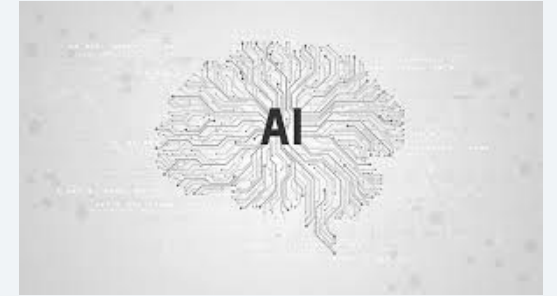
- Creative: Produce visually appealing and engaging content.
- Flexible: Adapt to various themes and promotional offers.
- Efficient: Generate content quickly and at scale.
- User-Friendly: Easy to use, even for non-designers.



Inspiration

- **Our purpose** : Our mission, simply put, is to help businesses scale by taking their ad creatives to the next level. Our purpose is to make our artificial intelligence technology and algorithms available to the world to create high-performing ad creatives that connect with an audience.
- Ai has become more creative in the last few years. The Development of [Creative AI](#) has enabled writers , artists and designers to create human-like text-based and image based content.
- Modern AI marketing tools can generate automated ad content. They can use [Natural Language Generation \(NLG\)](#) , [Generative Adversarial Networks](#) and so on to design human like content.
- For example : NLG can write ad-copy , short-form and long-form website and blog content automatically. Similarly , GAN(s) can produce realistic images and videos.
- With advancements in GenAi , Machine Learning and NLP , marketing tools have become more intelligent and provide sensitive automation to perform the most challenging marketing tasks.
- A [survey](#) suggests that 63% of digital marketing leaders find it difficult to deliver results with ad personalization and 84% fancy AI to deliver real-time, personalised customer ad experience.

Challenges We got Into



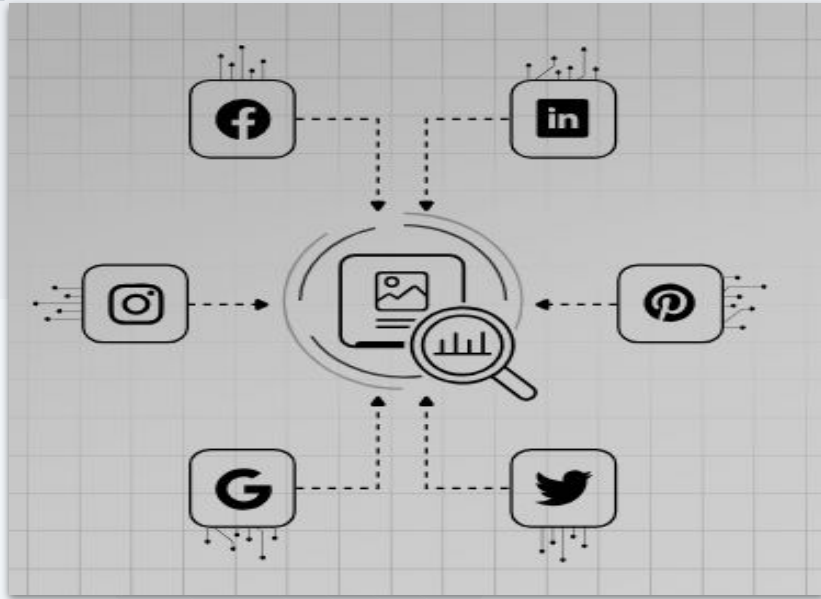
AI Needs a Lot of Data?

The answer is **Yes**.

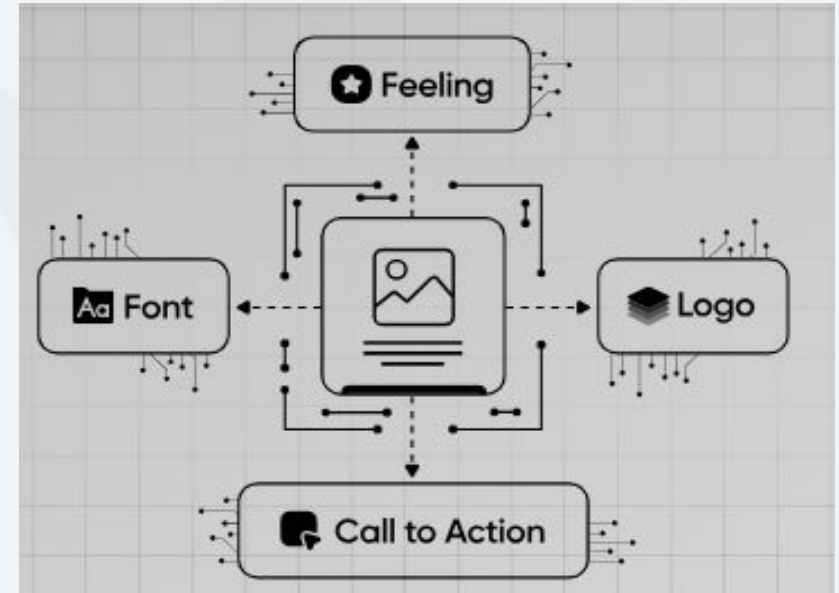
- AI needs high-quality data for training. The training process allows any AI model to learn the important features and patterns present in the data. Based on this learning, the AI model can generate new content.
- For creating AI-powered Admaster, the AdMaster AI advertising platform feeds on millions of historical high-converting ad creatives.
- They are collected via [Google Display Network](#) at regular intervals. With continuous training, the AI model's performance is improving every day. The AI model also trains on customer analytics collected from social media ad accounts like Google and Facebook.
- The trained model outputs hundred of variations of personalized and high-converting ad creatives.

Algorithm Of AdMaster Ai

1. **Data Collection** : We gather creative content from all the prominent social and display platforms.



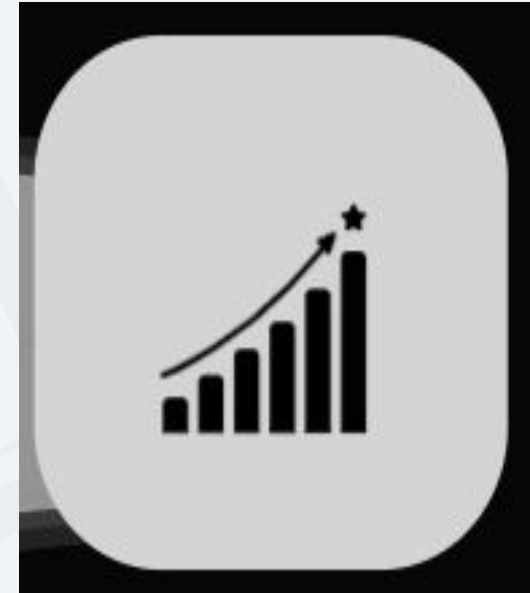
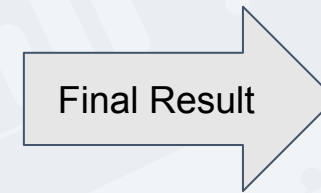
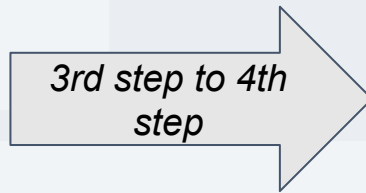
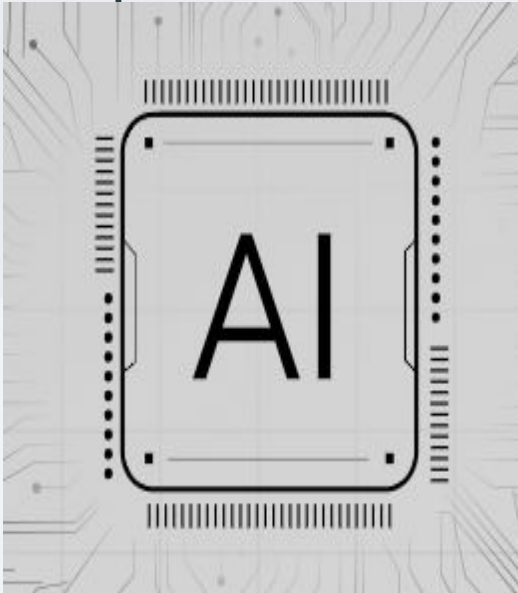
*From 1st step to
2nd step*



2. **Creative Analysis** : We analyze each of the gathered creatives and create over 80 data-points per image.

Algorithm Of AdMaster Ai

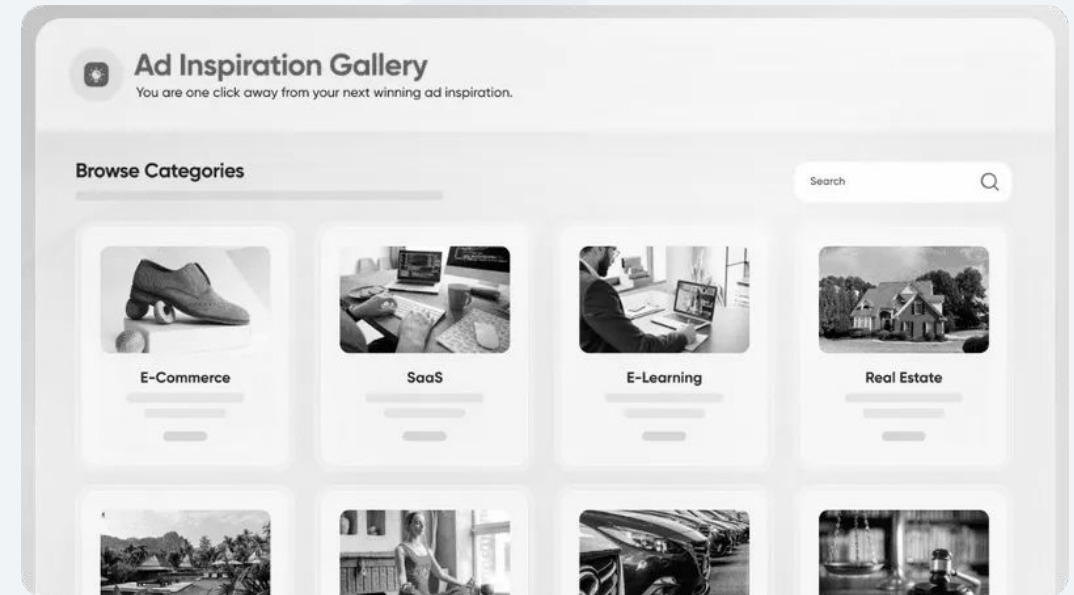
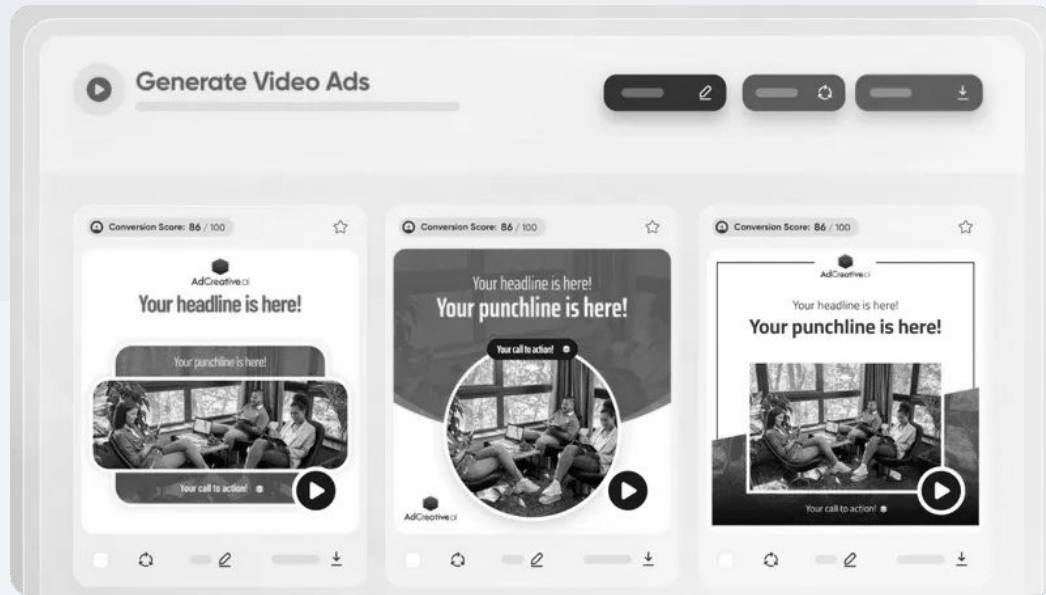
3. **Machine Learning** : Using the data-points and the performance of the creative, we train our unique machine learning model.



4. **Creative Generation** : We analyze each of the gathered creatives and create over 80 data-points per image.

Expected Use Cases Of AdMaster Ai

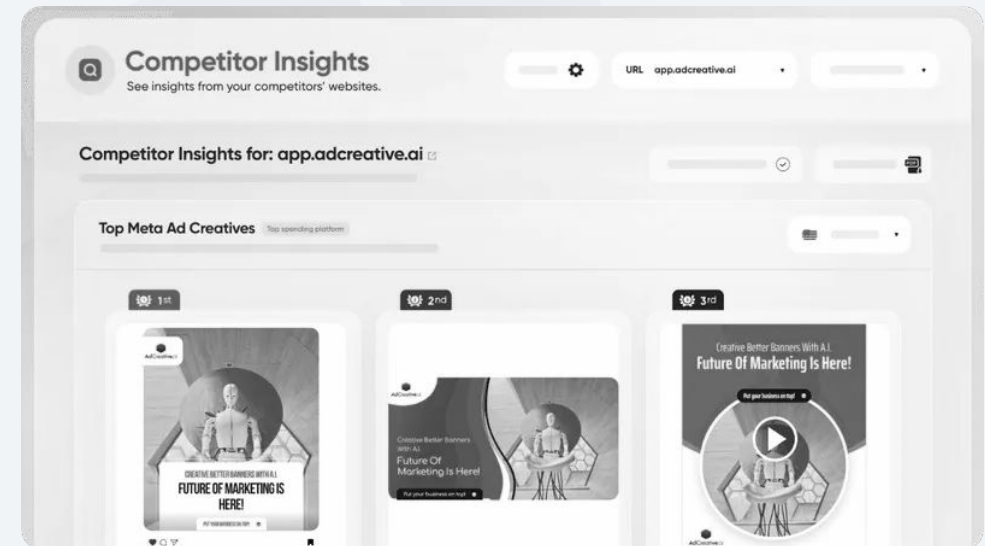
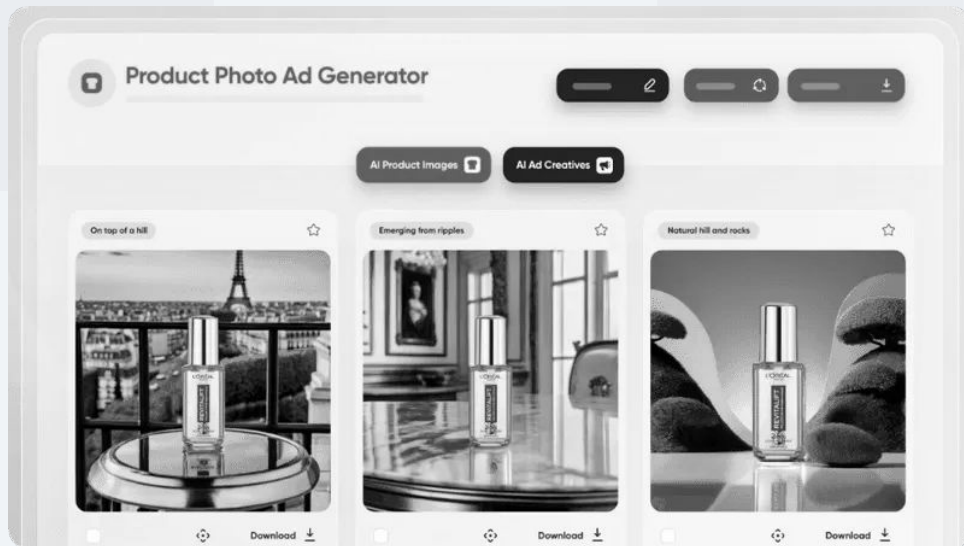
- **Generate Video Ads** : Generate conversion-focused videos for ads using our Artificial Intelligence. This is the one and only AI that can generate ready-to-use videos for high ROI.



- **Get Winning Ad Inspiration** : Explore and draw inspiration from a vast categorized library of successful ads from various business sectors. Simply select your category, and allow our system to fuel your next high-impact, conversion-optimized advertising campaign.

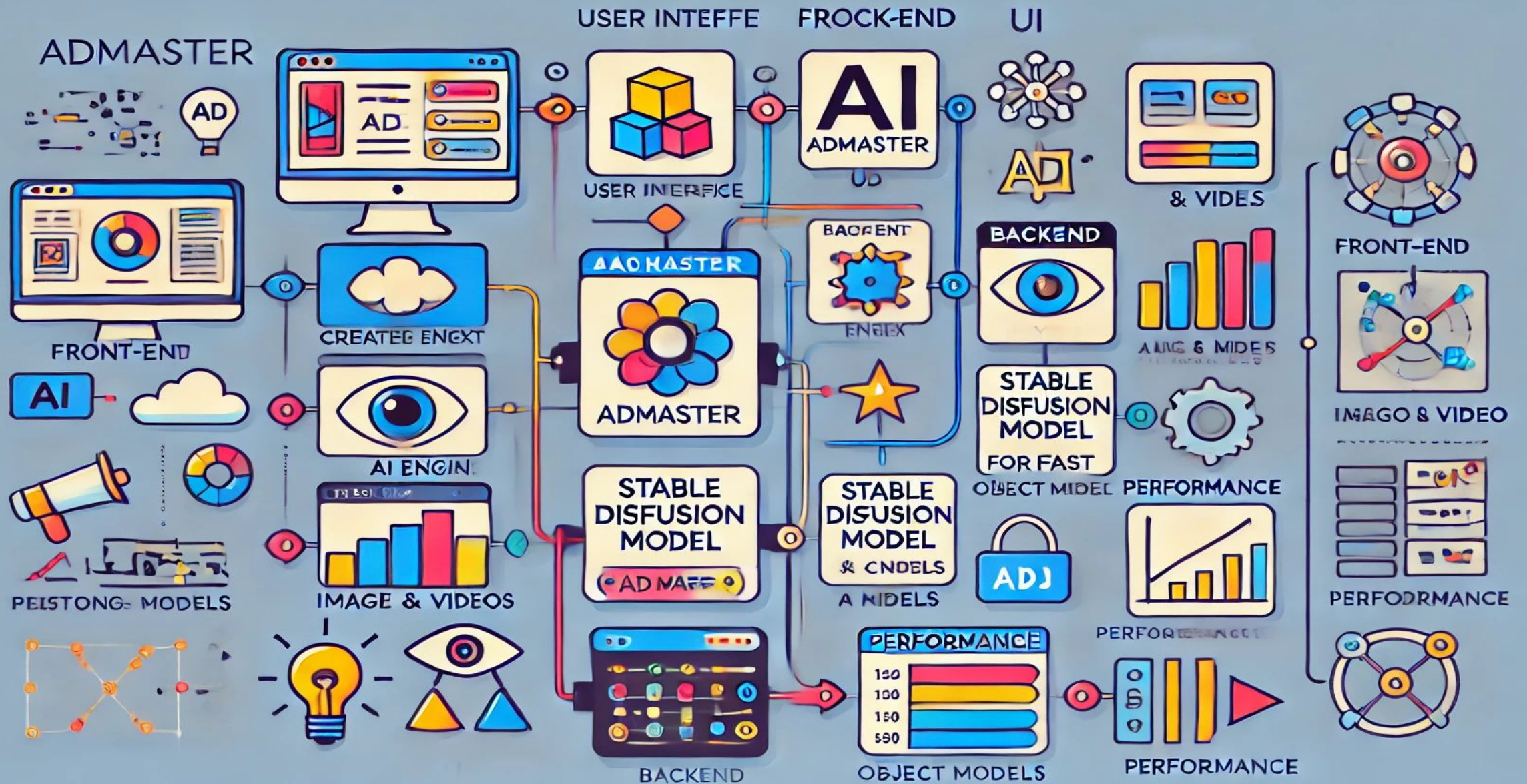
Expected Use Cases Of AdMaster Ai

- **Generate Product Photoshoots** : Transform your product photos into professional-grade photoshoots effortlessly with our advanced AI. Simply upload your product image, and our generative AI model will enhance it into a stunning, ad-ready visual.



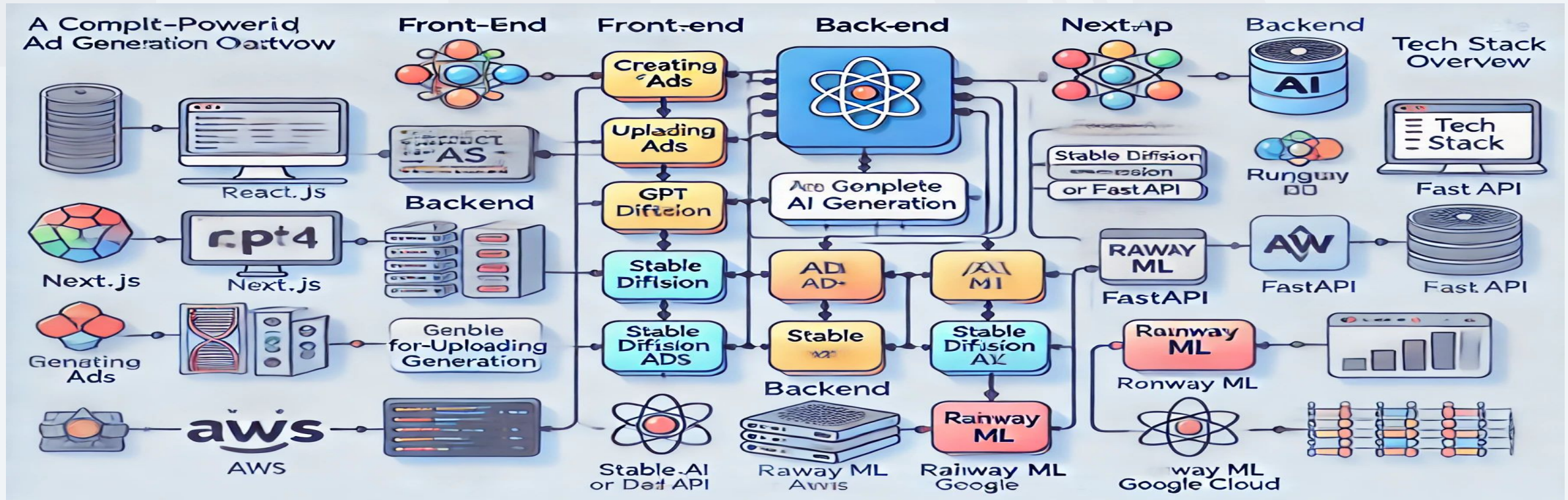
- **See Competitors' Ads** : Uncover and analyze your competitors' top-performing ads across platforms using our sophisticated AI. Gain valuable insights into their traffic sources and buyer demographics to strategize and refine your own advertising efforts effectively.

Architecture Of AdMaster Ai



Tech Stack Of AdMaster Ai

- **Front End** : Use **React.Js** or **Next.Js** for building the UI which will interact with the users.
- **Back End** : Use **Node.js** or **Python(FastAPI)** to integrate and handle requests for generative AI models.
- **Generative AI for Text** : **GPT-4** or **Cohere AI** for generating engaging ad texts
- **Generative AI for Images** : Use **Stable diffusion** or **DALL-E 3** to generate banners or images.
- **Generative AI for Videos** : Integrate **Runway ML** for this stuff.
- **Cloud Services** : **AWS SageMaker** or **Google Cloud Ai** to host and serve our model



Learnings From This Problem Statement

1. Understanding Generative AI and Its Applications

- **Learning:** You'll develop a foundational understanding of how generative AI models, such as GPT for text and Stable Diffusion for images, can be applied in real-world scenarios like advertising.
- **Benefit:** This will help you appreciate how AI can automate creative tasks like generating ads, banners, and even videos, exposing you to the possibilities of AI in marketing and design.

2. Full-Stack Development Skills

- **Learning:** You'll gain experience with both front-end (React.js or Next.js) and back-end development (Node.js, Python with FastAPI), handling everything from user interface to API integration and model hosting.
- **Benefit:** Building a full application from scratch gives you practical exposure to how front-end, back-end, and cloud services come together, improving your problem-solving and architectural design skills.

3. Model Deployment and API Integration

- **Learning:** You will learn how to integrate and deploy AI models using cloud platforms (like Hugging Face, AWS, or Google Cloud). Understanding how to deploy models efficiently is a crucial skill for working with AI at scale.
- **Benefit:** This gives you a practical introduction to AI infrastructure, teaching you how to handle real-world challenges like scaling, model optimization, and API management.

BY TEAM MARVEL 141
(Sachin Kumar Gupta and Vaibhav Chaudhary)

Thank You!
