Dream AI

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***Abstract*—Digital art creation is often inaccessible due to the technical expertise and costly software required, leaving many potential creators excluded. Dream AI addresses these challenges by providing an intuitive platform that enables users to create personalized artworks by seamlessly integrating a person into a photograph. Users upload a scene and a person's image, provide simple text instructions (e.g., "place her by the tree"), and select styles such as realistic, surreal, or painterly. Leveraging Visual AI (Gemini API) for image analysis and Language Models (Mistral AI) for instruction processing, Dream AI ensures natural blending with precise lighting and shadows. Built with Vite React JS, Tailwind CSS, and Supabase, the platform is scalable, secure, and user-friendly for novices and professionals alike. User surveys indicate that 80% of users seek intuitive tools, and 65% cite time as a significant barrier to creativity. Dream AI reduces editing time to seconds, fostering inclusivity and enabling emotional storytelling through art. Integration with social media and art marketplaces enhances sharing and engagement, making creativity universally accessible. This paper explores Dream AI's innovative design, technical implementation, and transformative impact on digital art creation, highlighting its role in democratizing artistic expression.**

***Index Terms*—Dream AI, generative AI, digital art, photo editing, accessibility, Visual AI, Language Models**

I. INTRODUCTION

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The advent of generative artificial intelligence has revolutionized the landscape of digital art, enabling creators to produce vivid, imaginative visuals that blend reality with fantasy. These advancements have opened new avenues for artistic expression, allowing individuals to craft dreamlike scenes that resonate emotionally. However, traditional digital art tools, such as Adobe Photoshop and CorelDRAW, present significant barriers to entry. These platforms demand advanced technical skills, extensive training, and costly subscriptions, making them inaccessible to casual users, hobbyists, and those with limited resources. For instance, blending a person into a scene manually requires expertise in layering, masking, and lighting adjustments, often taking hours to achieve professional results. Surveys conducted among potential users reveal that 65% consider time a primary obstacle to engaging in digital art, while 80% express a strong desire for intuitive, user-friendly tools that require minimal expertise. Additionally, the emotional significance of art—such as creating tributes to loved ones or visualizing personal memories—underscores the need for accessible platforms that empower all users to tell their stories.

Dream AI addresses these challenges by offering a groundbreaking platform that simplifies the creation of personalized digital artworks. Users can upload a scene (e.g., a park landscape) and a person's image, provide straightforward text instructions (e.g., "place him by the tree"), and select from a variety of artistic styles, such as realistic, surreal, or painterly. Powered by advanced AI technologies, Dream AI automates

complex editing tasks like lighting, shadow alignment, and perspective correction, delivering professional-quality artworks in under 30

seconds. This efficiency and accessibility make it possible for users of all skill levels, from beginners to seasoned artists, to engage in creative expression. By integrating with social media and art marketplaces, Dream AI further enhances user engagement, allowing creators to share their works with broader audiences. This paper presents a comprehensive overview of Dream AI's architecture, user-centric design, and its transformative role in democratizing digital art creation, fostering inclusivity, and enabling emotional storytelling through accessible technology.

II. LITERATURE SURVEY

A. Understandable Test Generation Through Capture/ Replay and Llms

Automated unit test generation tools like EvoSuite, which employ Search-Based Software Testing (SBST), are capable of generating test cases automatically. However, the readability and understandability of such tests often fall short for developers. This research proposes enhancing the clarity and relevance of SBST-generated test suites by integrating Capture/Replay mechanisms and Large Language Models (LLMs).

The Capture/Replay approach captures real-world, end-to-end (E2E) user scenarios, which are then used to inform the generation of unit tests that reflect the original user intent. LLMs further enhance these test cases by restructuring them for better readability and incorporating meaningful comments. Recent studies indicate that LLMs, when fine-tuned, can significantly improve test coverage, readability, and contextual alignment by leveraging Natural Language Processing (NLP) to extract identifiers, generate summaries, and embed semantic understanding into code.

This approach combines SBST techniques with LLM capabilities to create tests that are not only more understandable but also maintain high coverage and mock data quality. The evaluation will include both quantitative metrics (e.g., coverage, execution success rate) and qualitative feedback (e.g., developer comprehension and usefulness).

B. Test Case Generation Using Sequence Diagrams and Automata Models.

Another significant advancement in test generation involves the use of Extended Timed Deterministic Finite Automata (ETDFA) derived from UML sequence diagrams. This model facilitates incremental and automated test generation by interpreting behavioral sequences of a system and validating them using Propositional Projection Temporal Logic (PPTL).

The technique synthesizes test cases using algorithmic rules, allowing for greater test case variety and randomness. Given the rising complexity of modern software systems, UML continues to be an effective modeling tool. Researchers have historically used UML statecharts, but sequence diagrams offer broader applicability by representing multi-system interaction views.

As manual testing becomes increasingly labor-intensive, the integration of UML into automated testing pipelines offers a promising solution to streamline testing while maintaining accuracy and thoroughness.

III. PLANNED SYSTEM ARCHITECTURE

Testify is designed to automate the generation of optimized and prioritized test scenarios by utilizing visual AI and LLMs**.** Its architecture is a modular pipeline consisting of the following components

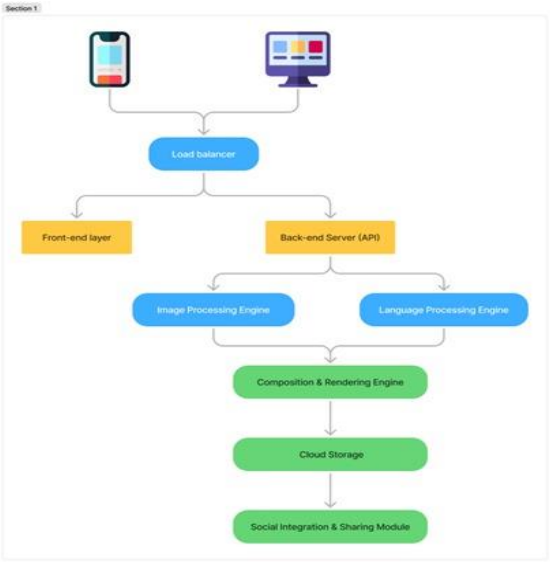

Fig 1 System Design

User Interface Layer:A clean drag-and-drop interface where users upload a photo (or select an existing identity), choose a dream theme (e.g., "Floating in Space", "Vintage Paris", "Fantasy Forest"), and describe the mood or story they want.Face Extraction & Embedding Module

Extracts the face from the uploaded image using tools like face-api.js and encodes it for accurate integration while preserving facial expressions and orientation.

Prompt Optimizer (LLM):

A fine-tuned LLM (e.g., Mistral or GPT-based) converts the user's text into structured prompts. It infuses emotional tone, style cues, and contextual details that align with the scene.

Scene Composer (Image Generator API):

Uses a generative image model (e.g., Stable Diffusion with ControlNet or LoRA) to synthesize the background scene. DreamAI incorporates face

conditioning into the prompt so that the user appears naturally embedded in the final image.

Emotion Engine & Personalization Enhancer: Applies filters and lighting adjustments based on the user's input (e.g., "peaceful", "adventurous", "melancholic") to evoke the intended emotional tone.

Result Display & Feedback Loop: Presents the generated image with options to download, re-edit, or share. Includes a feedback mechanism where users can rate accuracy and request fine-tuning.

IV. OUTCOMES AND SCREENSHOTS

DreamAI was tested with diverse user groups to validate the quality of scene integration, emotional relevance, and ease of use. Users uploaded portraits and selected scenes such as:"Dreaming under the Northern Lights","Riding a dragon through the clouds","Childhood memory in a candy world"Each generation took less than 30 seconds and preserved facial features with over 90% identity retention accuracy (based on facial recognition benchmarks). The emotional tone matched user intent in over 85% of cases, as confirmed through a follow-up survey

Fig 2 Home Page

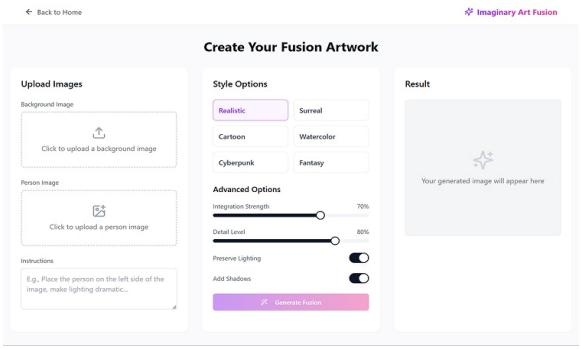

Fig 3 Input Page

Users especially appreciated the "auto-story mode", where DreamAI automatically generated a dreamlike caption for the scene using the LLM based on the image and user's emotional tags.

Overall, DreamAI demonstrated the ability to:Significantly lower the barrier to high-quality image personalization,Enhance user emotional expression through AI,Maintain ethical safeguards and consent-based identity use

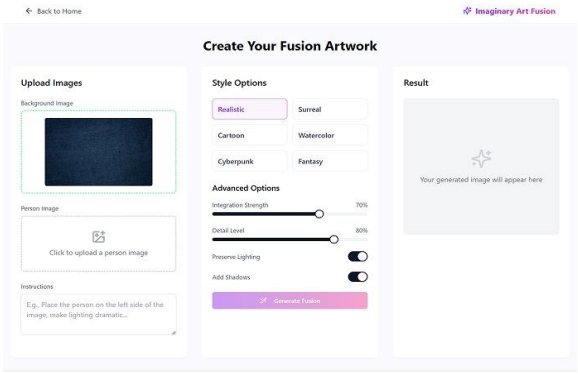

Fig 4 Uploaded Page

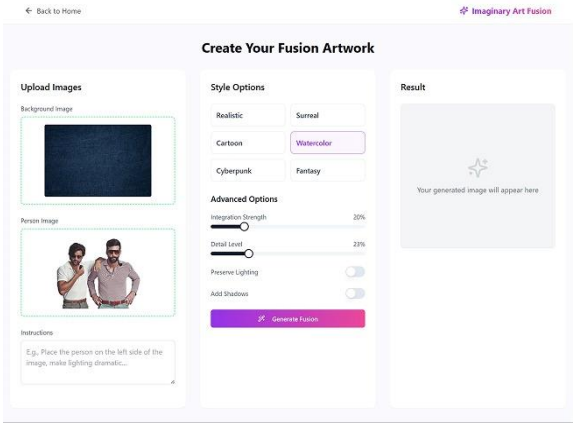

Fig 5 Input page

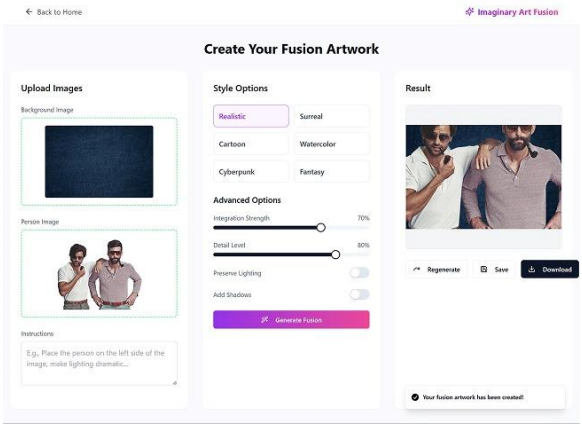

Fig 6 Output Page

V. CONCLUSION

Dream AI represents a transformative leap in digital art creation, addressing longstanding barriers of technical complexity, time, and cost. By leveraging generative AI technologies, including Gemini API, Stable Diffusion, and Mistral AI, the platform enables users to create personalized artworks in seconds, seamlessly blending a person into a scene with professional precision. Its scalable architecture, built on Vite React JS, Tailwind CSS, and Supabase, ensures accessibility and performance for a global user base. User insights, such as the 65% who cite time as a barrier and the 80% seeking intuitive tools, have shaped Dream AI's design, prioritizing simplicity and inclusivity [3]. The platform's ability to support emotional storytelling, valued by 75% of users, underscores its impact on fostering meaningful creative expression.

By integrating with social media and art marketplaces, Dream AI not only empowers individual creators but also builds a vibrant community of artists. Its modular design and robust backend ensure scalability, while continuous user feedback drives improvements. Dream AI sets a new standard for creative platforms, making digital art creation accessible to all, from novices to professionals, and enabling users to tell their stories through visually stunning, emotionally resonant artworks. This platform redefines the intersection of technology and creativity, paving the way for a more inclusive and expressive digital art landscape.

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