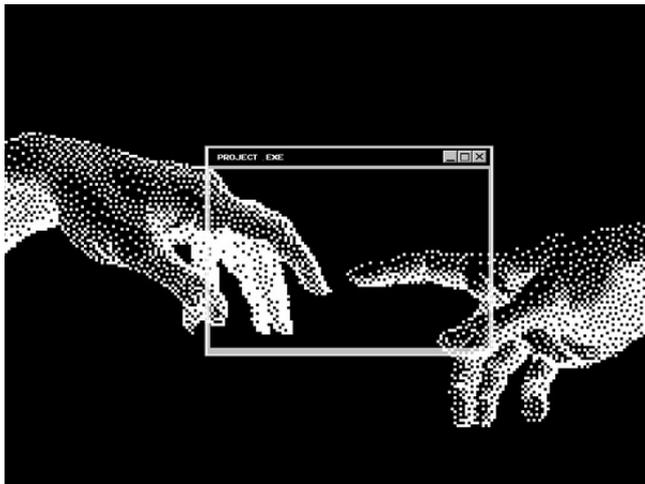




DeckFlow: An Infinite Image Generation Canvas with Input Specifications to Support Multi-Modal Prompt Design

TECHNOLOGY NUMBER: 2024-455



OVERVIEW

A multimodal, infinite-canvas platform to streamline and enhance image generation workflows

- Improves over existing methods by integrating prompt design, multimodal input, and workflow reuse
- Digital art creation, education, creative industries, design prototyping, accessible AI-powered creativity

BACKGROUND

Text-to-image generation models have unlocked new possibilities for artistic creation and visual expression, enabling users to produce unique visuals from simple text prompts. Historically, creating images with these AI models required significant effort in crafting and refining textual prompts—a process known as prompt engineering. Users often found this process challenging and opaque, especially when trying to convey nuanced or complex ideas. To enhance results, many resorted to switching between multiple platforms and tools, fragmenting the creative workflow, disrupting context, and making it difficult to reproduce or share successful image generation approaches. These shortcomings underscore the need for a more intuitive, integrated tool that simplifies prompt creation, supports reuse, and enables multimodal input to bridge the gap between user intent and generated art.

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Category

Software

Software & Content

MOSS - Michigan Open Source Support

Accessible Technologies/Blind

Accessibility

Accessible Technologies/Motor

Accessibility

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INNOVATION

DeckFlow introduces a paradigm shift in prompt engineering for image generation by offering an infinite canvas that supports multimodal specifications and dynamic scaffolding. Unlike traditional one-dimensional text-only interfaces, DeckFlow allows users to build their image generation prompts through a visually organized system of interconnected text and image clusters. Its dynamic dimension suggestions guide users in exploring options and refining their intent, while multimodal input enables a more nuanced expression of ideas. The platform consolidates access to various generative AI tools in one workspace and supports documentation and reuse of workflows, providing continuity and repeatability across creative sessions. User evaluations demonstrate DeckFlow's superiority, citing high controllability, flexibility, and enhanced user experience, and highlighting its potential applications in digital art, creative education, prototyping, and collaborative design processes.

ADDITIONAL INFORMATION

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