Comic Generator Documentation

Overview

This comic generator creates a complete 2x2 panel comic strip from a user-provided prompt. It consists of three main phases: story generation using a T5 model, image creation using Stable Diffusion, and comic assembly with PIL. The result is a visually engaging and structured comic saved as a single image file.

Phase 1: Story Generation

- Uses `google/flan-t5-base` via Hugging Face Transformers.
- Structured into four panels: Introduction, Storyline, Climax, Resolution.
- Each panel contains:
1. Short description
2. One line of dialogue
3. Visual prompt for image generation
- Prompted format ensures consistency in output, which is then parsed and cleaned.

Phase 2: Image Generation

- Uses `StableDiffusionPipeline` from the `diffusers` library.
- Enhances each prompt with a comic-related style like 'comic book', 'manga', 'superhero', or 'cartoon'.
- Generates 512x512 images using torch autocast for performance.
- Memory optimized using attention slicing.

Phase 3: Comic Assembly

- Uses PIL to create a 2x2 grid layout (2 columns x 2 rows).
- Each panel contains:
* Image
* Panel label and type
* Description and dialogue with text wrapping
- Final comic is saved in 'comic_output' folder and displayed via matplotlib.

Customization

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- Prompt: Any user-defined story idea.

- Style: Choose from 'comic', 'manga', 'superhero', or 'cartoon'.

- Model settings (like temperature, max_length) can be adjusted in the story generation phase.

Requirements

- torch

- diffusers

- transformers

- PIL (Pillow)

- matplotlib

- fpdf (for documentation)