



The Monday.com AI APP Hackathon

Date: 21 and 22 June 2023

"AI VidGenerator"

By AI Data Dreamers
team

Agenda

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Application Integration
- 4 monday.com AI assistant
features in MyApp
- 5 How to Run Custom
AI Application
- 6 How to Use Custom AI
BOT Application
- 7 Use Cases
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Team Members



Aadil Abdul Sattar
Technoly Enthusiast



Marva Shahid
AI/ML



Ali Ahmad
UIUX Designer



Rida Jabbar
AI/ML



Introduction:

"AI-VideoGenerator" is an application to Revolutionize video content creation through the power of artificial intelligence and say goodbye to tedious manual video creation and hello to effortless content generation. It Unlocks the potential of text-based prompts to generate captivating and engaging videos. It is an animated visual showcasing the process of transforming text into video content. A user inputting text prompts and AI Data Dreamers-AI-VideoGenerator generates video according to that content.

Stable Diffusion

Stable Diffusion is a latent text-to-image diffusion model capable of generating photo-realistic images given any text input. Stable Diffusion is used to generate text to video but it can generate a short-sized video.

Stable Diffusion uses a deep generative model to synthesize images based on a given prompt. It was used to generate detailed images conditioned on text descriptions, though it can also be applied to other tasks such as inpainting, outpainting, and generating image-to-image translations guided by a text prompt, now it can also generate video based on the text prompt.



Use-Cases

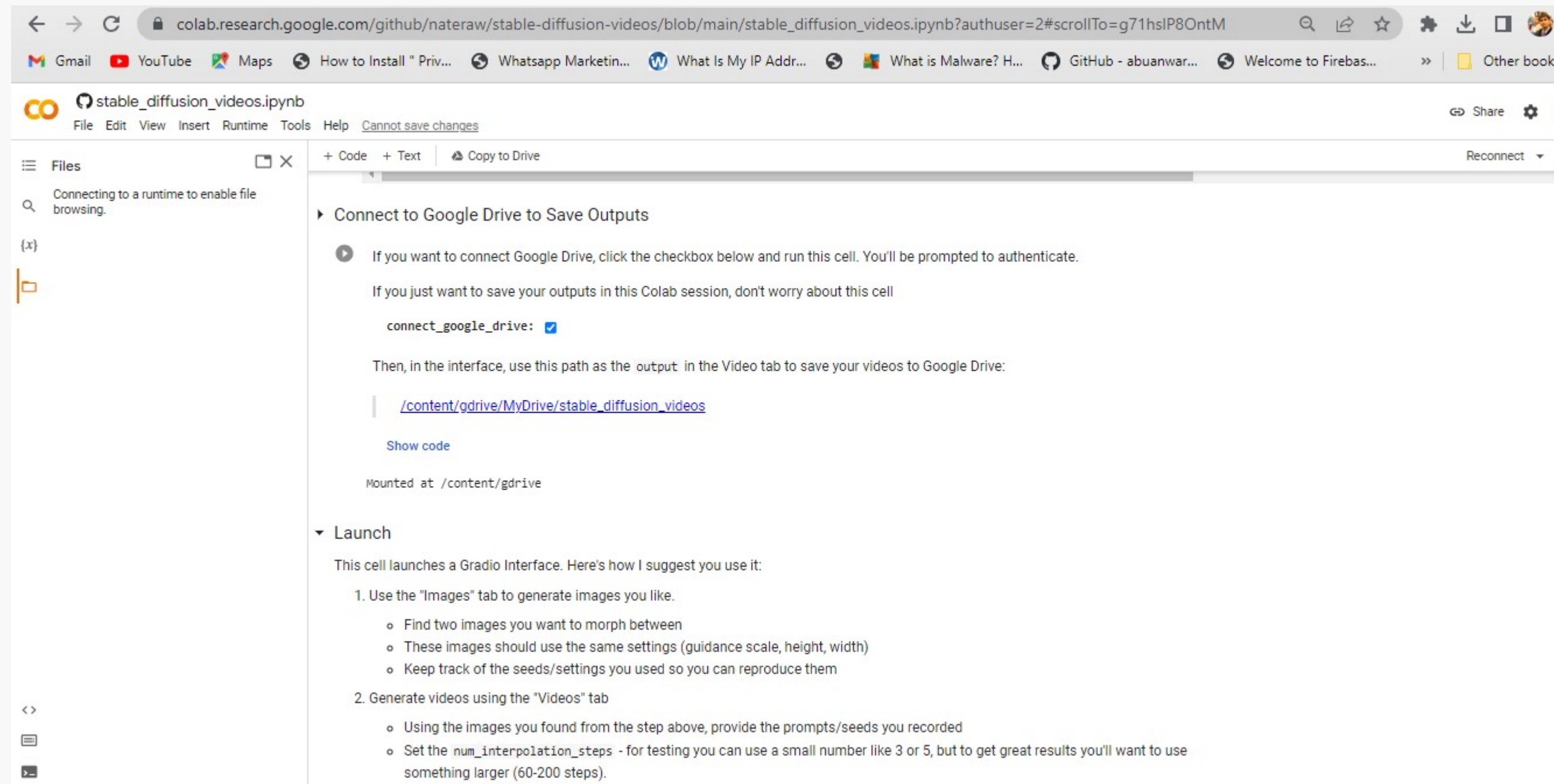
- AI replace all the video editors, any video can be created easlity through prompt.
- Understanding through Video is not only better but also provides creativity.
- Audiences that create a video not only express but also clearly understand better like Content creators and e-commerce businesses.
- It also saves their time searching the pictures, editing them, and creating a video/reel out of them.
- Businesses who want to create a reel of their products
- Social Media reels can be easily generated now without any video editors
- Creators who want to use certain audio from the sound cloud can also download it.



Tools and Framework used for Custom AI Application Code:

- Python using latent space of stable diffusion model
- Dependencies torch, IPython.display

How to Use AI-VidGenerator



The screenshot shows a Google Colab notebook interface. The browser address bar displays the URL: `colab.research.google.com/github/nateraw/stable-diffusion-videos/blob/main/stable_diffusion_videos.ipynb?authuser=2#scrollTo=g71hslP8OntM`. The notebook title is `stable_diffusion_videos.ipynb`. The left sidebar shows a file explorer with a search bar and a folder icon. The main content area contains the following text:

Connect to Google Drive to Save Outputs

If you want to connect Google Drive, click the checkbox below and run this cell. You'll be prompted to authenticate.

If you just want to save your outputs in this Colab session, don't worry about this cell

`connect_google_drive:`

Then, in the interface, use this path as the `output` in the Video tab to save your videos to Google Drive:

`/content/gdrive/MyDrive/stable_diffusion_videos`

[Show code](#)

Mounted at `/content/gdrive`

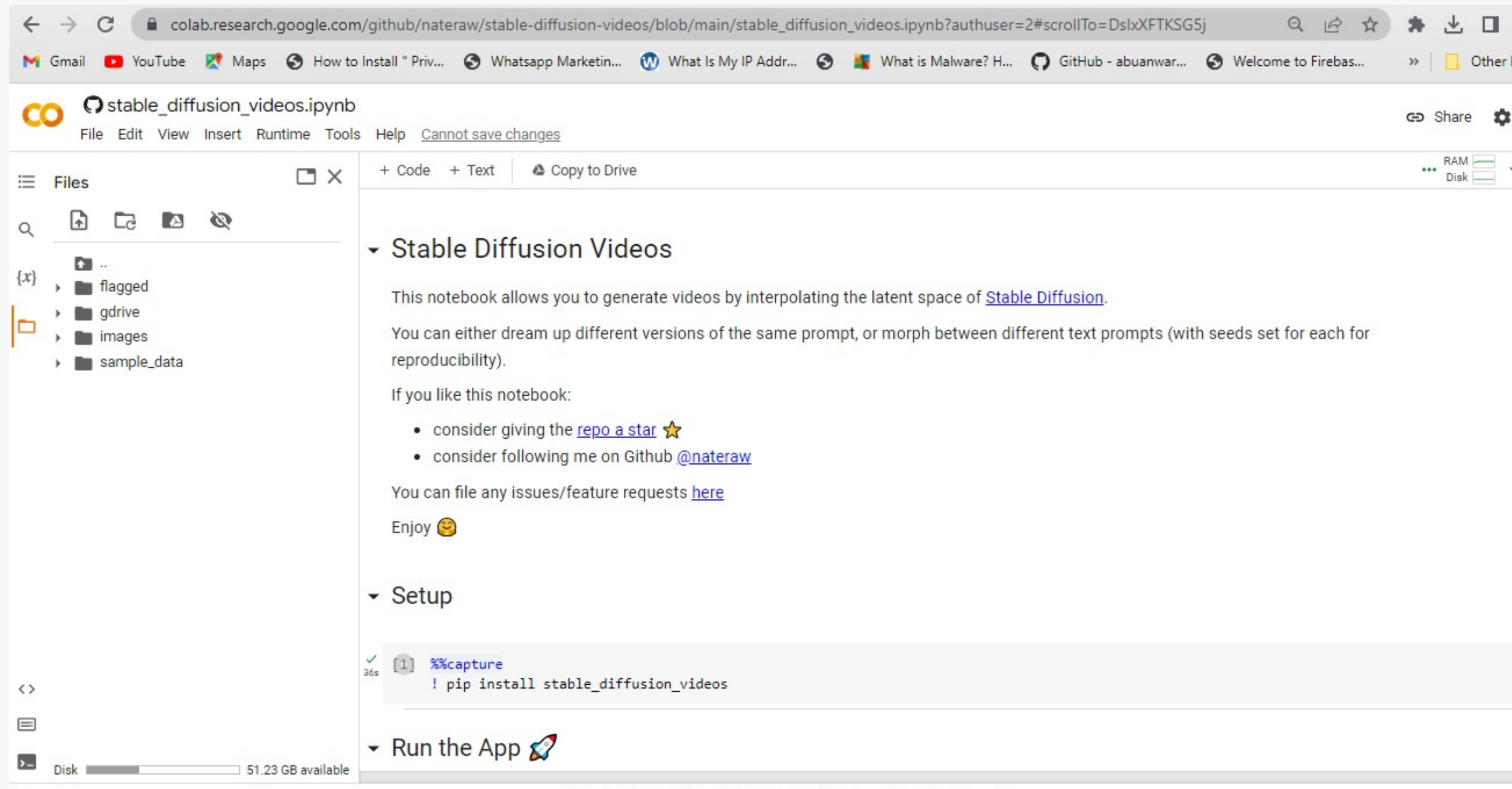
Launch

This cell launches a Gradio Interface. Here's how I suggest you use it:

1. Use the "Images" tab to generate images you like.
 - Find two images you want to morph between
 - These images should use the same settings (guidance scale, height, width)
 - Keep track of the seeds/settings you used so you can reproduce them
2. Generate videos using the "Videos" tab
 - Using the images you found from the step above, provide the prompts/seeds you recorded
 - Set the `num_interpolation_steps` - for testing you can use a small number like 3 or 5, but to get great results you'll want to use something larger (60-200 steps).



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This notebook allows you to generate videos by interpolating the latent space of [Stable Diffusion](#).

You can either dream up different versions of the same prompt, or morph between different text prompts (with seeds set for each for reproducibility).

If you like this notebook:

- consider giving the [repo a star](#) ★
- consider following me on Github [@nateraw](#)

You can file any issues/feature requests [here](#)

Enjoy 😊

The `Setup` section is collapsed. A code cell is visible with the following content:

```
%%capture
! pip install stable_diffusion_videos
```

The `Run the App` section is also collapsed. At the bottom left, a disk usage indicator shows `51.23 GB available`.



How to Use AI-VidGenerator

```
stable_diffusion_videos.ipynb
File Edit View Insert Runtime Tools Help Cannot save changes

+ Code + Text Copy to Drive Reconnect

[ ] %capture
! pip install stable_diffusion_videos

Run the App

Load the Interface
This step will take a couple minutes the first time you run it.

import torch

from stable_diffusion_videos import StableDiffusionWalkPipeline, Interface

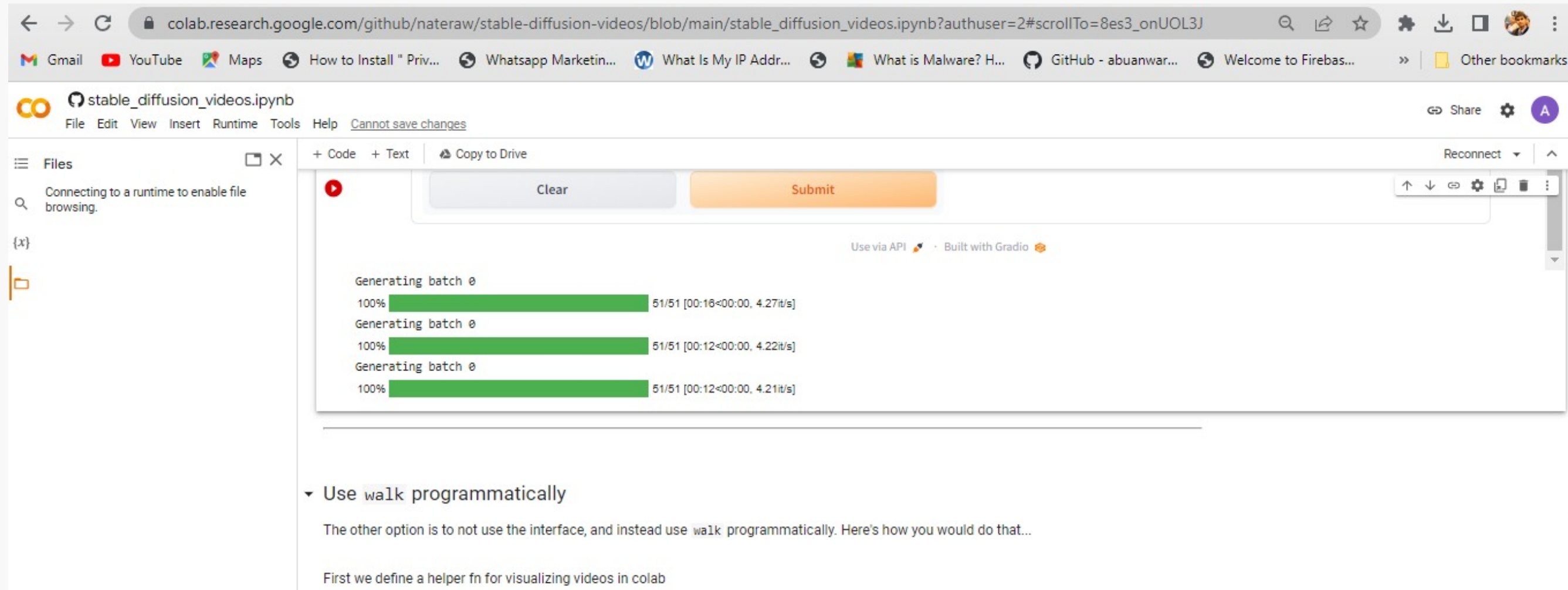
pipeline = StableDiffusionWalkPipeline.from_pretrained(
    "Compvis/stable-diffusion-v1-4",
    torch_dtype=torch.float16,
    revision="fp16",
).to("cuda")

interface = Interface(pipeline)

Downloading (...)p16/model_index.json: 100% 543/543 [00:00<00:00, 26.0kB/s]
Fetching 16 files: 100% 16/16 [00:27<00:00, 2.00s/it]
Downloading (...)processor_config.json: 100% 342/342 [00:00<00:00, 3.33kB/s]
Downloading (...)infig-checkpoint.json: 100% 209/209 [00:00<00:00, 1.84kB/s]
Downloading (...)_checker/config.json: 4.63k/? [00:00<00:00, 46.2kB/s]
Downloading (...)_encoder/config.json: 100% 572/572 [00:00<00:00, 5.70kB/s]
```



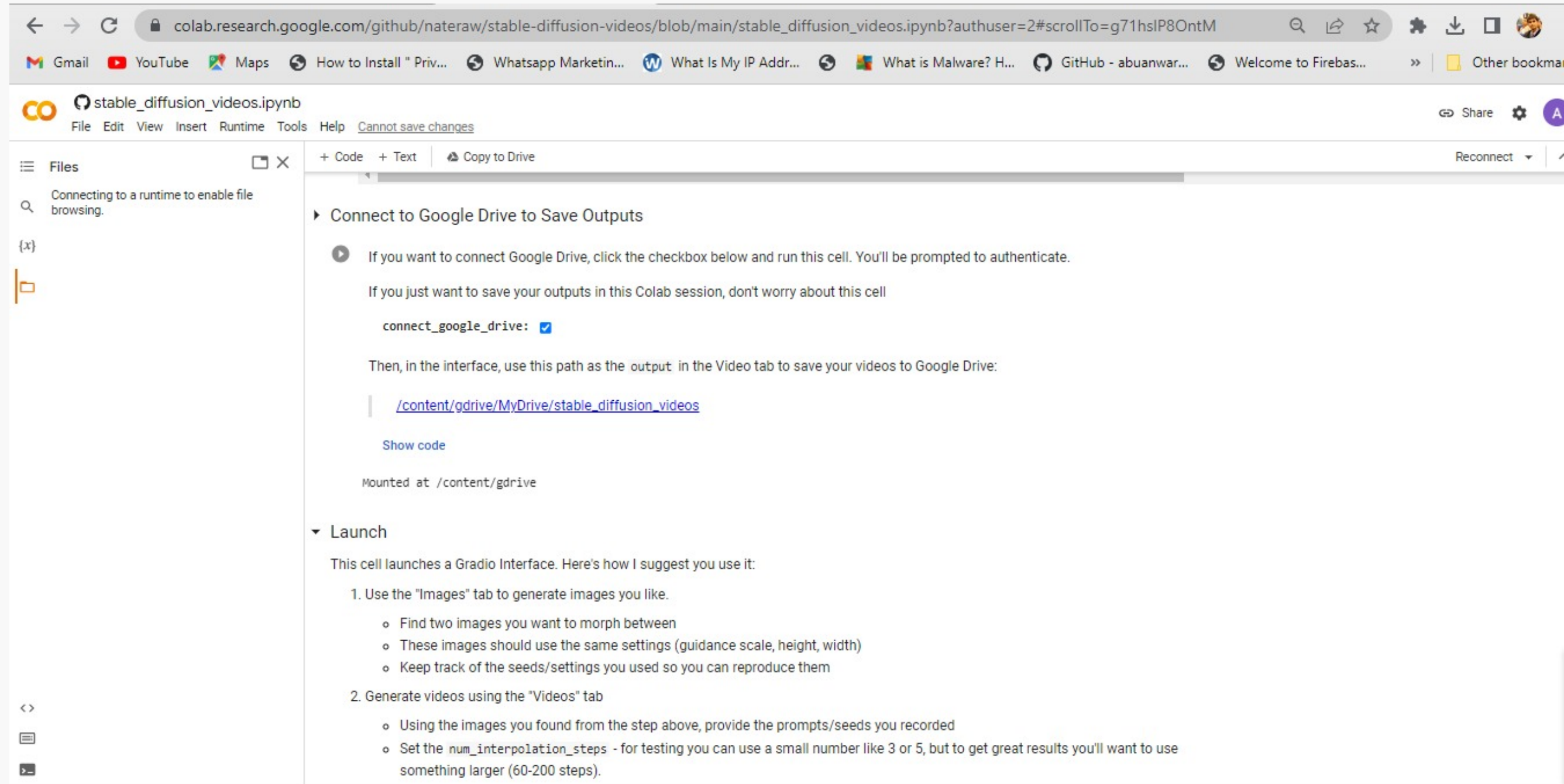
How to Use AI-VidGenerator



The screenshot shows a Google Colab notebook titled "stable_diffusion_videos.ipynb". The browser address bar shows the URL: `colab.research.google.com/github/nateraw/stable-diffusion-videos/blob/main/stable_diffusion_videos.ipynb?authuser=2#scrollTo=8es3_onUOL3J`. The notebook interface includes a menu bar with "File", "Edit", "View", "Insert", "Runtime", "Tools", and "Help". A "Cannot save changes" warning is visible. The left sidebar shows a "Files" panel with a search icon and a message: "Connecting to a runtime to enable file browsing." The main content area has a "Code" tab selected, with a "Copy to Drive" button. Below the code editor, there are "Clear" and "Submit" buttons. A progress bar indicates "Generating batch 0" is 100% complete, with a duration of 00:16:00:00 and a speed of 4.27it/s. Below the progress bar, there is a section titled "Use walk programmatically" with a dropdown arrow. The text in this section reads: "The other option is to not use the interface, and instead use walk programmatically. Here's how you would do that..." and "First we define a helper fn for visualizing videos in colab".



How to Use AI-VidGenerator



colab.research.google.com/github/nateraw/stable-diffusion-videos/blob/main/stable_diffusion_videos.ipynb?authuser=2#scrollTo=g71hsIP8OntM

stable_diffusion_videos.ipynb

File Edit View Insert Runtime Tools Help Cannot save changes

Files

Connecting to a runtime to enable file browsing.

{x}

+

+ Code + Text Copy to Drive

Reconnect

▶ Connect to Google Drive to Save Outputs

- ▶ If you want to connect Google Drive, click the checkbox below and run this cell. You'll be prompted to authenticate.

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Show code

Mounted at /content/gdrive

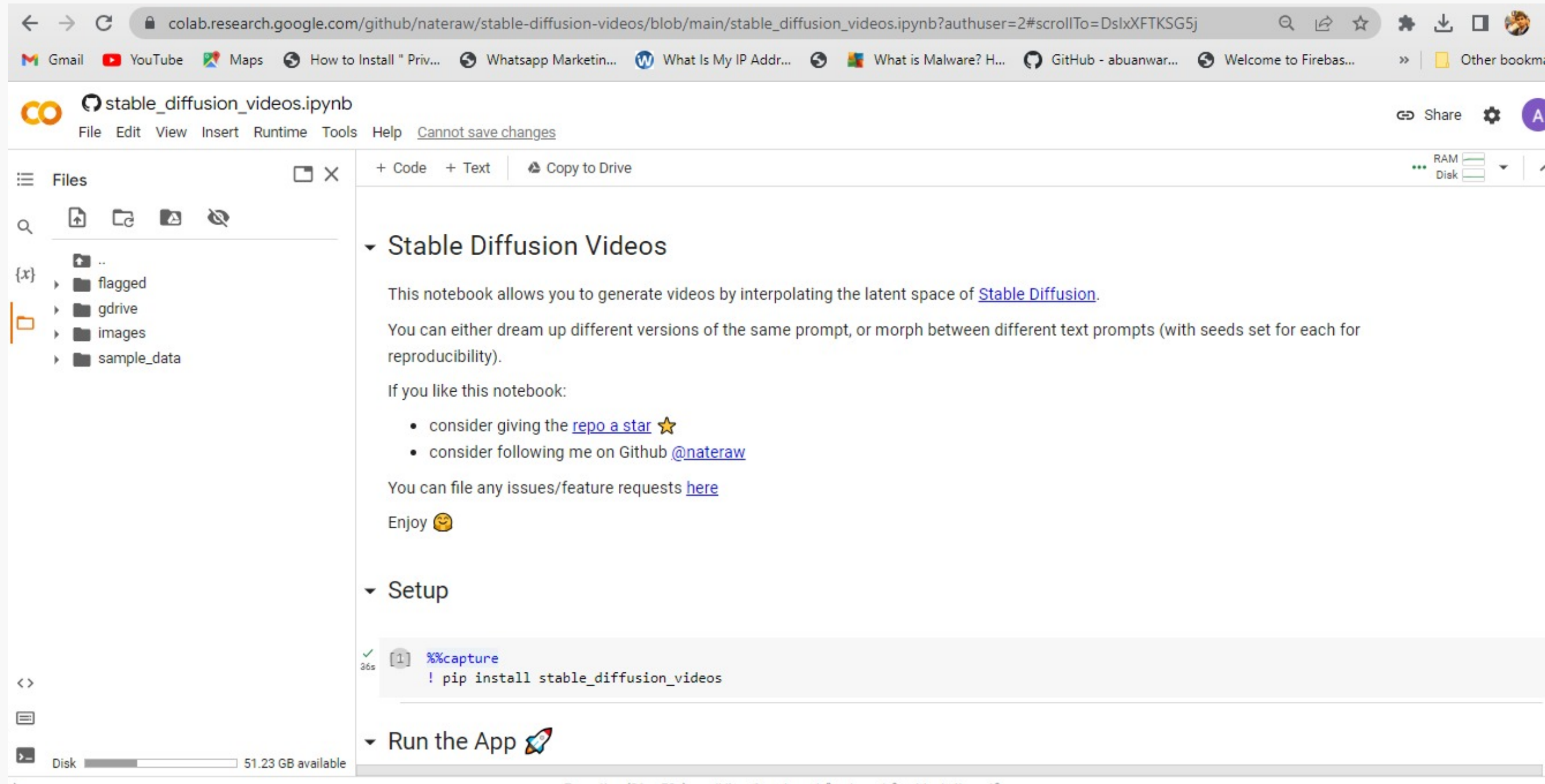
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Enjoy 😊

The next section is titled `Setup` and contains a code cell with the following command:

```
%%capture  
! pip install stable_diffusion_videos
```

The bottom section is titled `Run the App` with a rocket icon. At the bottom left, a disk usage indicator shows `51.23 GB available`. A purple circular button with a white right-pointing arrow is located in the bottom right corner of the overall image.

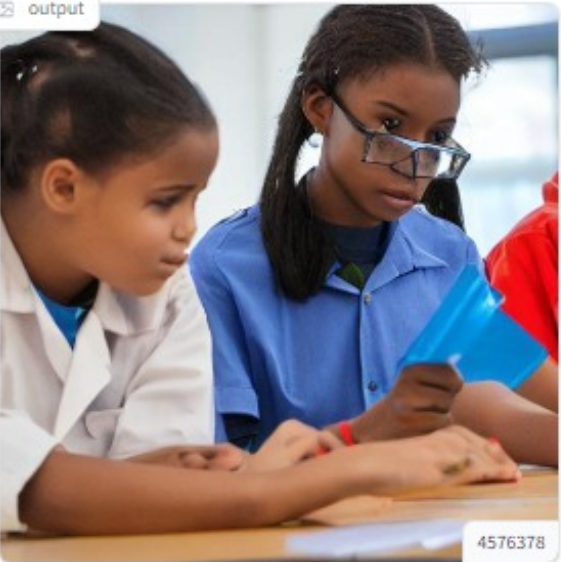
How to Use AI-VidGenerator

The screenshot displays the AI-VidGenerator web interface. The browser address bar shows the URL: `wuze5tnz2os-496ff2e9c6d22116-7860-colab.googleusercontent.com`. The interface is divided into two main sections: a control panel on the left and an output area on the right.

Control Panel (Left):

- Images! Videos!** (Tabs)
- Prompt:** `Students are attending the science class`
- Batch size:** `1`
- # Batches:** `1`
- # Inference Steps:** `50`
- Guidance Scale:** `7.5`
- Height:** `512`
- Width:** `512`
- Upsample**
- Output directory to save results to:** `./images`
- Buttons:** `Clear` (grey) and `Submit` (orange)

Output Area (Right):

- output** (Label)
- A generated image showing two young girls in a science classroom. One girl is wearing safety goggles and holding a blue folder. They are both looking at something on the table. A small ID number `4576378` is visible in the bottom right corner of the image.
- Flag** (Button)



How to run this Code:

- Install code from below link

https://github.com/marwashahid/diffusion_model

Conclusion:

- AI-VidGenerator has become a powerful for natural language processing, language understanding, visuallization, content creation and content generation.
- "AI-VidGenerator" app is a powerful tool that can be used to make language processing tasks easier and more efficient
- It has been used in many different use cases such as natural language generation, question answering, text summarization, and image captioning and Video Generation.

