IJIBC 24-1-13

A Feasibility Study on RUNWAY GEN-2 for Generating Realistic Style Images

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Abstract

Runway released an updated version, Gen-2, in March 2023, which introduced new features that are different from Gen-1: it can convert text and images into videos, or convert text and images together into video images based on text instructions. This update will be officially open to the public in June 2023, so more people can enjoy and use their creativity. With this new feature, users can easily transform text and images into impressive video creations. However, as with all new technologies, comes the instability of AI, which also affects the results generated by Runway. This article verifies the feasibility of using Runway to generate the desired video from several aspects through personal practice. In practice, I discovered Runway generation problems and propose improvement methods to find ways to improve the accuracy of Runway generation. And found that although the instability of AI is a factor that needs attention, through careful adjustment and testing, users can still make full use of this feature and create stunning video works. This update marks the beginning of a more innovative and diverse future for the digital creative field.

Keywords: Runway, Runway Gen-2, AI Generation, Real Style , Video Generation

1. Introduction

The new feature updates announced by Runway cater to a diverse range of users, creating a creative environment where individuals can try out innovative concepts and turn their ideas into reality. At the same time, it also brings convenience to storyboard production. Many people use it to assist in the production of video works. Since Runway generation is affected by many different factors, this time I focused on studying the feasibility of real-style video generation that people use most when using Runway. This study verified the feasibility of Runway Gen-2 in real style through a large number of tests and changing variables.

2. Background of Study

Updates to RunwayGen-2 are designed to make realizing ideas even easier. By blending text, images, and video, users have unprecedented freedom in visual storytelling and creative expression. This new feature not only allows creators to unleash their creativity, but also provides a powerful tool that enables artists, designers, filmmakers, and other practitioners in creative fields to push their concepts beyond traditional creative boundaries. into a captivating visual experience.

As mentioned above, Runway Gen-2 brings unprecedented creative freedom to users, but its current accuracy needs to be improved. We can't wait to see more creators use this tool to create visual works. Therefore, this article uses experiments to study how to improve the accuracy of Runway.

3. Analysis of Typical Case

3.1 The Impact of the Number of Subjects on Video Accuracy

In applications that generate videos from photo-realistic photos, characters are often the focus of the images. Therefore, test one is about generating dynamic videos from real-life character pictures. The focus of the test is the impact of the number of characters on the accuracy of video generation. Combined with the unstable nature of AI creation, the author conducted multiple tests. First, Midjourney was used to generate frontal eating scenes with different numbers of characters, and the generated images were uploaded to Runway Gen-2 for generation without using any instructions. Due to the instability of the AI, many attempts were made: in the single-player scene, although Runway Gen-2 still generated some inconsistent images, the accuracy was relatively high. However, Runway Gen-2 encountered major problems when generating a dynamic scene involving two people eating. Especially Especially when the character turns his head, it will change the character's face shape and facial features. In 12 attempts in pairs, there were changes in the characters' faces.Despite multiple attempts, the problem has not been solved. When generating a three-person scene, Runway Gen-2 again showed high accuracy. However, when trying to generate multi-person animations, we encountered a problem again. After the characters turned their heads, their facial expressions changed unnaturally. Table 1 presents the results of several of the tests. By scanning the QR code, you can see the contents of the video automatically generated by Runway Gen-2.

Table 1. Different Numbers of People Generated

Number of People	Original Picture	1st Test	2nd Test	3rd Test	4th Test	QR Code
1						

In addition to exploring the impact of the number of characters on video content, similar tests were also conducted using real animals as the protagonists. Referring to Table 2, first we use Midjoyrney to generate similar pictures with cats as the main body, in which the number of cats is from one to more, and then directly import these pictures into Runway Gen-2 to generate a cat dynamic video. Through the generated video results,

we can find that the accuracy of Runway Gen-2 in processing animal dynamics has been greatly improved. Even though the cat has some head turns, its face has not been changed much. From the above multiple attempts, we can find that the accuracy of Runway has little to do with the number of subjects in the picture.

Table 2. Different Numbers of Cats Generated

Number of Animal	Original Picture	Test	QR Code
1			
2			
3			
Multiple			

3.2 Action Proportion's Impact on Runway Accuracy

After comparing all the images in the 3.1 character generation process, it was found that Runway Gen-2 is currently unable to handle such movements of characters. In the three-person picture generation with high accuracy, the characters all held objects in their hands. Without instructions, Runway Gen-2 emphasized the generation of hand movements and did not generate the characters' turns. So will paying more attention to the action generation of the characters in the image improve the accuracy of Runway Gen-2? Based on this problem, I selected the image with the best generation effect in 3.1 and removed the cup in its hand to generate it. At this time, the accuracy of the video generated by Runway Gen-2 was reduced compared with the previous one.

Table 3. Remove Items From Hand

Original Picture	1st Test	2nd Test	3rd Test	QR Code

In order to avoid the contingency of AI, I made several more attempts: I tried to generate pictures with a

large proportion of hand movements. The videos generated at this time have shown great accuracy.

At the same time, according to 3.1, will the accuracy of Runway Gen-2 be improved after adding instructions to focus more on movement rather than turning? I regenerated the pictures that caused problems in 3.1 and added more action-oriented instructions to try again. I tried adding the command "Blink eyes and open mouth to speak" in order to improve accuracy by generating simple animations with Runway Gen-2. The results showed that this attempt produced relatively feasible motion effects in a two-person scene. When the command is "In the picture, The character lowers these head slightly", the accuracy of the generated multi-person video increases. However, in many attempts, there were many situations where the accuracy was not improved, and problems caused by head rotation still occurred. From this, it can be concluded that the instructions did not increase the proportion of hand movements.

Table 4. Holding Items in Hand Test

Original Picture	1st Test	2nd Test	3rd Test	QR Code

Table 5. Command Test

Keywords	1st Test	2nd Test	3st Test	QR Code
Blink eyes and open mouth to speak				

In the picture,
The character lowers
these head slightly

3.3 Main Object Edge Impact on Runway Accuracy

Although the accuracy of Runway Gen-2 is very high when generating animal images in 3.1, there are still some small problems. The cat will appear unnatural when it is overlapping or sideways. Is this because the current Runway Gen-2 cannot recognize animal hair well? To verify the impact of subject edge accuracy on intelligently generated video content, I used third-party software to improve subject edges so that the Runway Gen-2 tool could better detect their outlines. Then compare and analyze the results of the generated video with the content in 3.1.

First, I generated the cat that had problems in 3.1 by adjusting the edge contrast of the main object through PS. The problem of deformation due to edges has been improved. In order to verify its universality, I made many more attempts: as shown in Table 5.

Table 6. Edge Hardening Test

Test	Picture	Generate Directly	Strengthen edges	Strengthen edges Generation	QR Code
1					
2					
3					

Through multiple experiments, it can be concluded from the above comparison that although some problems will still occur, in general, the accuracy of the video generated by Runway is higher when the edges are obvious.

4. Conclusion

Through testing and research on the Runway Gen-2 tool on generating videos from real-style images, we found that the tool has some challenges and exhibits certain instability when dealing with character turns. This

problem is still difficult to completely avoid under the current technical level. Nonetheless, we recognize that the development of artificial intelligence is still evolving, and there are some simple but effective ways for users to improve the accuracy of Runway's generation. For example, in the test, we observed that by increasing the proportion of action generation of people in the image and strengthening the edge contrast of the subject, users can significantly improve Runway's accuracy in processing real picture styles. These adjustments are not only technically feasible, but can also be verified in practice, providing users with an effective means of optimizing generated results.

In summary, although the instability of AI is a challenge in current research, our study provides useful insights for users of the Runway Gen-2 tool to generate realistic style videos. From an academic perspective, Runway Gen-2 still offers more creative opportunities.In the future, as artificial intelligence technology continues to develop, we look forward to seeing further improvements in these tools in handling complex situations, creating a more satisfying generative experience for users.

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