

Digital Video and Audio Features Powered by Adobe Sensei

The artificial intelligence in Adobe's digital video and audio applications in Creative Cloud expand your possibilities and help you release your creativity.

More and more modern content is video: from the production of feature films, broadcast news and sports, to original streaming content, digital marketing video content for web campaigns, or online users sharing their stories and ideas on social platforms. The workday of the average content creator is absorbed by many time-consuming tasks, like organizing massive amounts of media, editing footage, fine-tuning audio, finessing long interviews, animating characters and so much more. Adobe Sensei, Adobe's artificial intelligence and machine learning technology, accelerates manual production tasks to help you get results quicker so you can focus more on storytelling.

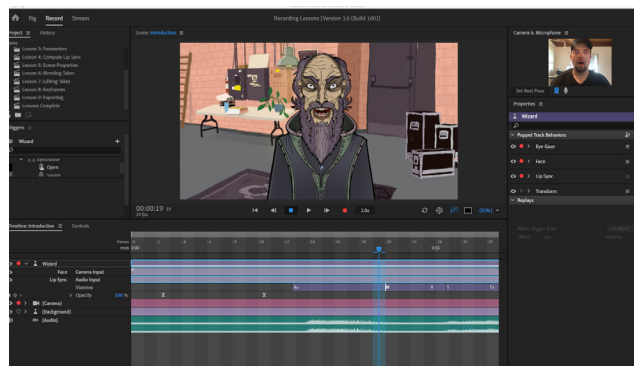
Character Animator

Character Animator, Adobe's tool for creating animated characters, uses your expressions and movements to animate characters in real time. Animating characters can involve tedious, repetitive, and detailed labor such as matching characters' mouth movements to voiceovers—or creating digital animations from original artwork. Character Animator's AI-driven capabilities Auto Lip Sync and Characterizer dramatically accelerate these processes so you can focus more on storytelling.

Auto Lip Sync:

Auto Lip Sync, powered by Adobe Sensei, tackles one of the most tedious tasks in animation: syncing animated characters' lip movements to their dialog audio tracks. For any animator, the creative aspect of this process consists of designing and drawing the various mouth poses required for animating speech; once that's done, they must place keyframes at appropriate points throughout an entire animated sequence to match the audio. Syncing character's speech is a time-consuming process. Auto Lip Sync uses artificial intelligence to analyze the audio track and identify the individual sounds uttered by the character. Once those sounds have

been associated with mouth pose keyframes you've designed, Auto Lip Sync works through the audio track and places those mouth pose keyframes at the correct points in the animation. An animation is automatically produced for the character's face that syncs exactly to their speech. This application of artificial intelligence results in tremendous time savings for animators, making the whole process so fast that it also allows for real-time streaming for their animation.

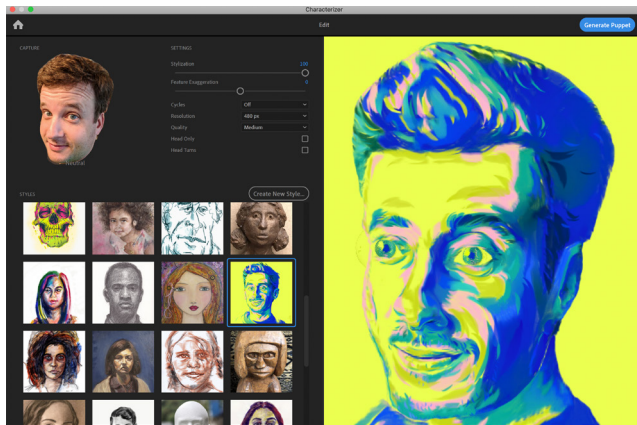


Learn more about [Auto lip-syncing](#) in the Character Animator documentation.

Characterizer:

Manual puppet creation involves drawing artwork in Photoshop or Illustrator with a layered structure that separates all the parts of the character's face and body so Character Animator can apply behaviors to the appropriate parts of the character. Characterizer, powered by Adobe Sensei, builds the complex structure that allows you to automatically create animations using facial capture and your webcam.

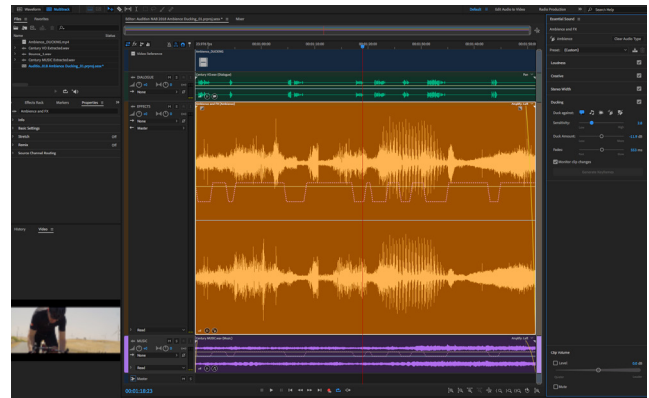
The process is straightforward: Guided by Characterizer, complete a series of facial captures of varied expressions. Then choose a built-in drawing style, which is applied to each facial pose. The selected drawing style will create an animatable character, which can be brought to life using a webcam. You can even provide your own drawing style from any portrait.



Learn more about [Characterizer](#) in the Character Animator documentation.

Premiere Pro

Adobe Premiere Pro is Adobe's industry-leading professional video editing software for film, TV, online and social content. This video software works with virtually any format and offers end-to-end workflows—including color grading, audio, and motion graphics—as well as deep integration with industry-standard Adobe tools like Photoshop and After Effects, giving professional filmmakers, broadcasters, marketers and social creators ultimate creative control. Premiere Pro leverages the power of Adobe Sensei to provide some its most innovative and useful features, including *Auto-ducking*, *Color Match*, and *Morph Cut*.



Auto-ducking:

Auto-ducking, powered by Adobe Sensei, automatically and dynamically adjusts the volume of music or ambience tracks to “duck” under voice over or sound effects. Auto-ducking intelligently applies those adjustments for you, adding key frames directly to your audio tracks, allowing for manual finessing of the mix.

You can select the sensitivity of the effect, the amount by which to decrease the volume, and the length of transitions in volume in and out of the ducking effect. Best of all, you get all the benefits of automating a critical but time-consuming task.

Learn more about [Auto-ducking](#) in the Premiere Pro documentation.

Color Match:

Matching shots and color correction are essential for ensuring visual consistency across shots, takes, scenes and cameras.

Color Match, powered by Adobe Sensei, helps accelerate shot matching: you pick any video or still frame as your reference image and let Color Match apply the light and color from the reference image to another shot. Color Match helps align the look and shows all of the adjustments in the Lumetri Color wheels so can make further refinements manually, if necessary.

Skin tones require special care when color grading and Color Match can help. If your images include people, select Face Detection and Color Match adjusts the results to maintain skin tones.

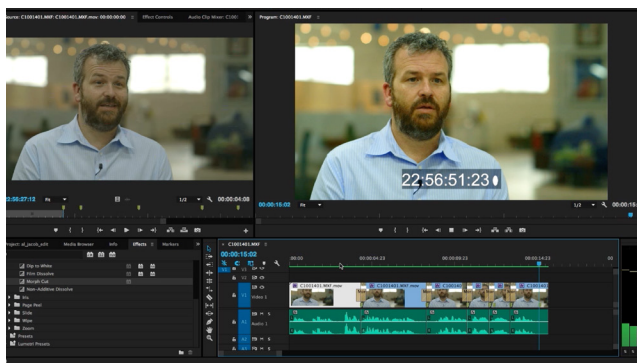
If you are new to color correction, Color Match gives you a running start and helps you understand how color adjustments work. For experienced users, Color Match helps accelerate the process of color grading.

Learn more about [Color Match](#) in Premiere Pro documentation.

Morph Cut:

Talking heads: if only they talked smoothly and succinctly. One of the most common tasks when editing interview footage is the need to edit out the inevitable stutters, repeats, ums and ers that pepper most people's speech. Transitions like b-roll need to be added between passages of clear speech to avoid jump cuts.

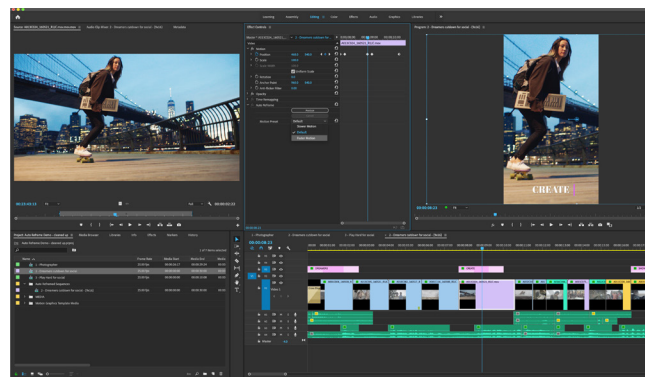
Morph Cut, powered by Adobe Sensei, brings artificial intelligence and machine learning to remedy this issue. Morph Cut analyzes the video around your cuts and selects essential elements of the frame to help erase jump cuts by eliminating visual breaks to create the illusion of a smooth talking head.



Learn more about [Morph Cut](#) in Premiere Pro documentation.

Auto Reframe:

One of the more time-consuming tasks of modern video creation is creating optimized versions of your content for different devices and platforms. That video you shot in a traditional 16x9 aspect ratio may be viewed by someone on a mobile device as a tiny sliver of a vertical video with big black bars above and below it. Adapting your video is not as simple as cropping because there is a good chance you will cut out some of the action. To get good results, you need to reframe the video dynamically, ensuring that the framing follows the important content. You can do this manually with frame-by-frame adjustments, but that takes time, especially if you have to create multiple versions of the video.



Auto Reframe, powered by Adobe Sensei, accelerates the process dramatically. Available in Premier Pro, Auto Reframe uses artificial intelligence to analyze your video, identify the subject, and track it moment by moment throughout the entire clip. This enables Auto Reframe to reformat the video with the new aspect ratio and adjust the positioning of your content dynamically.

Select from several built-in aspect ratios such as square, vertical, or specify your own. Before applying Auto Reframe, you can adjust the sensitivity depending on how much motion there is in your clip or sequence. Auto Reframe allows you to apply the effect to an individual clip or an entire sequence. Preserve your existing motion adjustments by nesting the clips. You have full control over the final result: fine-tune by adding or adjust keyframing. With Auto Reframe, you can produce alternate aspect ratios for any device or platform you wish to target, much more efficiently than with manual adjustments.

Read more about [Auto Reframe](#).

Premiere Rush

Adobe Premiere Rush is Adobe's all-in-one solution for shooting, editing, and sharing videos from your mobile device. Premiere Rush combines camera features that help you take professional-quality video with easy-to-use editing and sharing features you can use to quickly and easily produce polished results you can share across all your social media accounts. Premiere Rush takes advantage of Adobe Sensei to help you manage and edit audio for your project.

Audio Auto Classification:

Audio Auto Classification leverages the power of artificial intelligence to analyze the audio in each clip you import into

your project, identify what type of audio it represents, and label it accordingly: Dialogue, Music, or Other. When imported into a timeline, this classification enables certain content-specific effects and options to be available in audio clips that feature speech, such as automatically adjusting volume levels, balancing sounds, reducing background noise, reducing echos or enhancing speech with a preset that improves the sound quality of a male or female voice. When refining the audio clips that feature music, Premiere Rush allows you to automatically adjust volume levels consistently throughout your project and auto-duck, which automatically reduces the volume of music clips when voice clips are present on the timeline. Audio Auto-Classification thereby helps you manage, edit and enhance your audio.



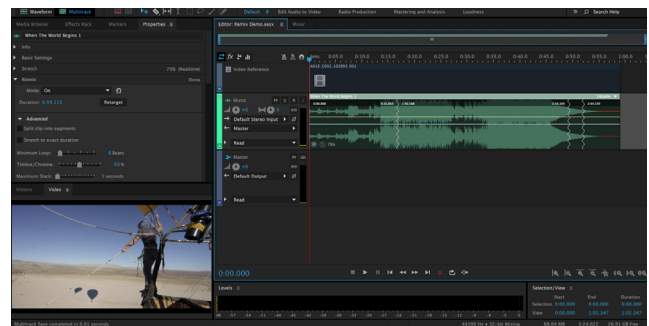
Learn more about [Audio Auto-Classification](#) in Premiere Rush documentation.

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Auto-Ducking:

Auto Ducking, powered by Adobe Sensei, works like its counterpart in Premiere Pro, automatically and dynamically adjusting the volume of music or ambience tracks to “duck” under voiceover or sound effects. With Premiere Rush, this intelligent feature is pretuned to provide an effect you can simply use without having to worry about fine adjustments.

To use Auto-Ducking in Premiere Rush, simply add the audio file you want to your video project, then select it and check the Auto-Duck option in the Audio panel. Auto-Ducking then uses its Sensei-powered AI to analyze your chosen audio against the other audio tracks and then lower the volume of your chosen track to allow the other audio to come through. Auto-Ducking thus helps you produce a professional-sounding audio mix with little effort.



Read more about [Auto-Ducking in Premiere Rush](#).

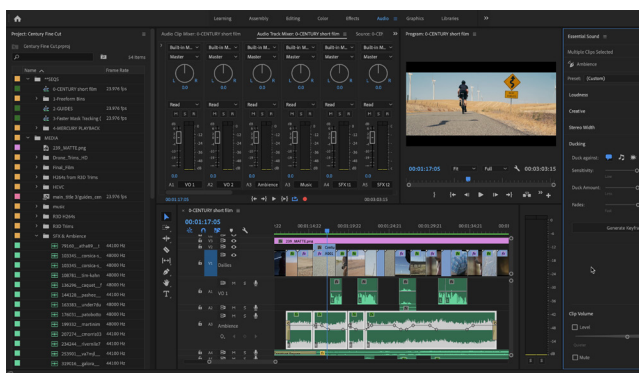
Audition

Adobe Audition is Adobe's professional audio editing suite. Not only does it provide sophisticated audio editing and effects, Audition works seamlessly with Adobe Premiere Pro to offer a combined solution for video and audio production. Audition leverages Adobe Sensei to intelligently edit audio for length with Remix and volume by Auto-ducking.

Remix:

When editing video, users often need to match music to duration of the video sequence. Traditionally this means fading out the song before it is over or precision razor cuts to remove sections of songs—a time-consuming task. Remix, powered by Adobe Sensei, solves the problem.

Remix automatically rearranges music to match the duration of your video. Working within Audition projects, or taking audio exported from Adobe Premiere Pro, Remix analyzes the audio track you've selected and intelligently trims it to the desired length. Remix takes into account the rhythm of your track, its timbre, and its harmonics to comb through the audio and find the places where it can snip audio out while matching the audio on either end of the snip, producing a clean cut. Working through the full length of the track, Remix makes as many cuts as needed to reduce the overall length to what you need. You can select the length to match an existing cut or sequence, or directly enter the length you want. The result is a seemingly continuous track of audio you can use as background for your video; simply export the result back to Premiere Pro, and in a minute or two Remix has done something that might have taken you an hour.



Learn more about [Remix](#) in the Audition documentation.

Auto-ducking:

Auto-ducking, powered by Adobe Sensei, automatically and dynamically adjusts the volume of audio tracks to “duck” under the audio you want the audience most to hear. In most instances, you’d want a music track’s volume lowered while there’s dialog in the video. Auto-ducking intelligently applies those adjustments for you.

Auto-ducking lets you duck any audio type against another. You can select the audio you wish to duck against another, its sensitivity (the threshold level that triggers ducking), the degree to which the volume is reduced, and the fades out and back in. Auto-ducking in Audition can also take the audio from an Adobe Premiere project, edit it, and send the results back to Premiere. Best of all, you get all the benefits of machine-learning automation while retaining full control of the final results via keyframe adjustments for fine-tuning the mix.

Learn more about [Auto-ducking](#) in the Audition documentation.

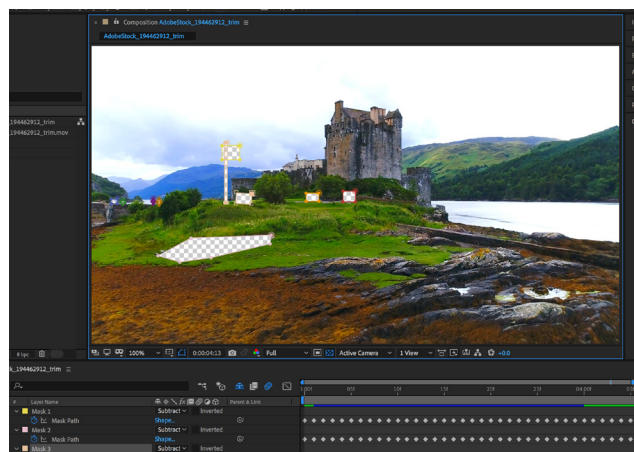
After Effects

After Effects is Adobe’s industry-leading motion graphics and video effects application. With After Effects, you can manipulate video and graphics to produce visual effects, create motion graphics and animations from just about anything, add titling, titling effects, and import/export projects from Premiere, Photoshop, and other Adobe apps. After Effects leverages machine learning with Adobe Sensei to help you avoid reshooting when unwanted objects intrude in your video.

Content Aware Fill for video:

Content Aware Fill for video, powered by Adobe Sensei, tackles a common problem: unwanted objects in video footage. Whether it’s the minivan in the background of an ancient battle scene, the Starbucks cup in a medieval tavern, or the boom mic intruding from the top of the frame, unwanted objects can unintentionally ruin a video sequence. Content Aware Fill uses artificial intelligence to analyze the scene containing your unwanted object, remove it, and fill in the video frame with appropriate pixels.

Once you’ve masked the visual element that you want removed from your video frame, Content Aware Fill scans the footage before and after the selected frame in which you identified the object and chooses pixels most appropriate to fill in. For moving objects, it estimates the motion in the scene to understand what parts of the background to use to fill in place of the object. For static objects, it fills in with pixels sampled from adjacent areas of the frame to estimate the appropriate content. After completing the process, the object is removed and you get a cleaner shot, more quickly and more efficiently than manual frame-by-frame retouching.



Learn more about [Content Aware Fill for video](#) in the After Effects documentation.

Conclusion

The artificial intelligence and machine learning capabilities of Adobe Sensei offer you the power to enhance your content and deliver polished results much more efficiently. Whether it's automatically generating an animated character, building slide shows and collages on the fly, producing smooth interview footage, rearranging music to fit your project, or removing unwanted objects from your video shoot, features powered by Adobe Sensei can dramatically help accelerate time-consuming production tasks so you can achieve professional results faster.

Spend more time storytelling.

