

ARTIFICIAL INTELLIGENCE IN PRODUCTION

A SPECIAL REPORT FROM PRODUCTION.INK



Overview

You'd be hard-pressed to find anybody working in a creative industry today who has not encountered the rise of generative artificial intelligence either abstractly or intimately. Whether we'd like to admit it or not, AI is a tool that must be learned and understood.

But with the immense power these new tools bring, such as generating ideas and images, brainstorming, and more, many fear that artificial intelligence will threaten the work of creatives in industries such as graphic design, copywriting, and, of course, the entertainment industry. According to a January 2024 study by the Animation Guild called [Future Unscripted: The Impact of Generative Artificial Intelligence on Entertainment Industry Jobs](#), the positions that will face the highest amount of job losses are “sound engineers, voice actors, concept artists, and entry-level employees.”

These statistics are concerning, especially for young people looking to enter the entertainment industry—many of whom just finished undergraduate degrees in film, audio engineering, etc. For entertainment companies, however, hiring fewer employees can contribute to higher profits. But will the products they produce lack originality, creativity, and that unique flare only humans can produce? This has been the major concern for critiques of AI across many creative industries. Will it apply to the entertainment business too?

At the same time, if you have seen the level of quality being produced by AI tools like OpenAI's [Sora](#), you can attest that it is truly amazing. One need only imagine how brightly a studio budgeter's eyes lit up when they saw what could be done by inputting a simple text prompt rather than flying a crew to a location. It is no surprise that one of the key labor issues in 2024 is how AI impacts the writers and the actors (among others). Sora and its ilk are just the beginning, of course.

In this report, we dig deeper into the risks and rewards of the advent of generative artificial intelligence in Hollywood and Madison Avenue and everywhere in between where professional content is produced. Sticking your head in the sand is no longer an option, so we are also providing a listing of tools that are out there that can be utilized in productions today. More and more are coming online every day, so you might check out the [Production.Ink's AI toolkit](#) which is updated regularly for the latest and greatest new tools.

We are loathe to take a position on whether generative artificial intelligence in production is a good or bad thing. It's coming and we cannot stop it. However, we can say this: Those that embrace this new reality have the best chance to survive and thrive, and those that ignore it will be passed by and forgotten.

The Risks

The industry's biggest concern about AI is job losses, and rightfully so. That [Animation Guild survey](#) of production execs estimates 204,000 jobs will be adversely affected; a third of respondents predicted over 20% of all entertainment industry jobs, or roughly 118,500 positions, will be cut outright. Impacts are likely to be felt acutely in editing rooms and behind cameras.

Industry executives estimate 204,000 positions will be adversely affected; 118,500 jobs may be cut outright

You will have also seen controversy about deep fakes and unauthorized AI reproductions of real humans. Morgan Freeman's likeness was [faked to promote](#) a book; Scarlett Johansson's voice may or may not have been [used for an OpenAI](#) product. It's an issue for talent, but we don't think it's the core issue for the production workers.

The unions have attempted to set guidelines around ownership of ideas and AI in recent deals. The [Writer's Guild agreement](#) of 2023 allowed writers to use generative AI as a tool and still have their product be deemed literary material that the writer must be paid for like anything else. The [recent IATSE deal](#) set the guideline that no

employee is required to provide AI with prompts that might lead to employee displacement. It's worth noting that the IATSE established the right to engage in conversations with studios about revising AI language before the deal expires, whatever that means.

But those only apply to new projects with studios. As Scott Galloway expertly explained on a June 20 podcast episode of "The Town with Matthew Belloni," neither deal fully addresses the question of training and copyright infringement. AI is ingesting and being trained on content without its creators' or publishers' consent—and it's concerning that production workers who contributed are seeing no reward, either.

It's easy to imagine a system like the new streaming bonuses, where production workers receive added compensation when a project they worked on is used in training. It's not a cause the unions have taken up to date, and it's a real risk that widespread IP infringement and loss of potential windfalls continue.

The Opportunities

The same consequences of AI that may lead to job loss will also make creative and production work cheaper, more efficient, and more enjoyable for those who remain. Production timelines will be shorter, the cost barriers to content creation will be lower, the path to realizing a creator's vision will be easier, and production and post-production time will be spent more on creative and directorial tasks.

It's already happening. 77% of respondents to the [Animation Guild survey](#) already use generative AI to speed up rotoscoping, upload images to virtual production screens, etc. Yana Collins Lehman has seen [weeks shaved](#) off a traditional 26-week post-production schedule.

77% of production execs are already using AI to speed up production timelines

Benefits will be realized on-set, too. Camera and lighting networks can be automated and adjusted by one person with a tablet or phone. Virtual stages are eliminating expensive and time-consuming trips to on-location shoots.

All this frees up production workers from busywork, allows them to spend more time on creative, and gives them more resources to achieve their vision. That's exciting. And lesser production costs means that high-quality production is more accessible to independent content creators.

The rewards of AI are there for those who want to adopt them—and will hopefully have positive ripple effects industry-wide. Total [jobs](#) and [new project volume](#) have been down since the strikes, but we hope the lower cost of projects, enabled by AI, balances job consolidation by adding more work in total.

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I tried **Filmustage** and found it very impressive. I don't know how they do it and I don't need to know. Getting an automatic and almost instant breakdown is very valuable for a producer. There is less guess work involved when you can have an instant overview of how many locations a particular script needs and how many scenes each actor has. A report like this will help me get an overview without hiring someone for 1 or 2 days to do a breakdown.



JON GUSTAFSSON, DIRECTOR, PRODUCER

Case Studies

Here are some of the most interesting uses of AI in production we've seen:

Case Study: [The Late Show with Stephen Colbert](#) & [Runway ML](#)

One way that AI tools have been used to benefit TV production is by cutting down edit time. The Late Show with Stephen Colbert recently revealed that the use of Runway, which describes itself as an “applied AI research company,” has cut their edit times from five hours to five minutes. The Late Show production team uses Runway to create visuals and videos from scratch. They can create character animations, import desired speech into a person or character's mouth with the click of a button, or quickly clean up the “rough edges” in a video shot using green screens and props. Overall, the use of Runway eliminates stress and cuts work time when perfecting and editing videos and images the team creates, but it can also generate videos and images on its own. They do not rely on it entirely, but it comes in handy as The Late Show uses graphics and animations often. (Source -

<https://runwayml.com/customers/late-night-show-cbs-uses-Runway/>)

Case Study: [Netflix's Gentlemen](#) & [Filmustage](#)

Award-winning director of photography Callan Green shared his experience using the AI-based platform, Filmustage, for his projects including Netflix's recent hit, “Gentlemen.” Filmustage is a U.S.-based startup that uses artificial intelligence for various aspects of film production to streamline the pre-production process, such as script breakdowns and scheduling, synopsis crafting, and budget management. Discussing his experience with Filmustage, Green says, “Filmustage allows me to quickly look at scripts and make notes, which is crucial as I have limited time due to personal commitments. The time saved using Filmustage translates into more efficient project management and less stress, as I can quickly access and process information without the need for time-consuming manual updates. The time savings are significant, and as they say, time is money.” Other prominent users of Filmustage are director and Oscar-winning set decorator Roger Christian on the remastering of “Black Angel” due in 2024; visual effects pioneer Mark Kolpack; and Zebra Production Kenya on the TV series “Salem.” (Source, <https://www.aiinhollywood.com/home/filmustage-ai-tool-used-in-netflixs-gentlemen>)

The AI Tools

Here are the latest and greatest tools we have seen to make your life easier and help you create better productions. This list gives you some of those cutting edge technical tools. None of these are substitutes, however, for real humans to make productions (and make them better!).

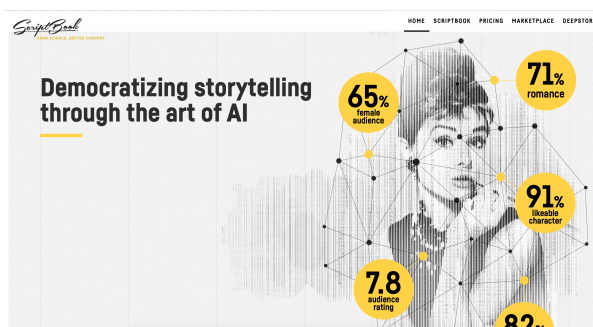
We're already seeing AI help with each stage of the production process:

- Scripting: Validating ideas and concepts, formatting scripts, generating dialogue, screening for bias in scripts and content, analyzing and summarizing content, predicting commercial success and outcomes
- Pre-production: Creating storyboards, generating and optimizing shooting schedules, creating text-to-image concept art
- Logistics: Suggesting budget allocations, tracking financials to budget, reducing time on set, forecasting revenue and profit in real time
- On set: Controlling lighting, simplifying set design and construction with AI-assisted 3D printing, generating text-to-visual B-roll, speeding up roto
- Post: Reducing manual VFX editing time, creating original scores, reducing manual editing and cleanup, automating metadata tags

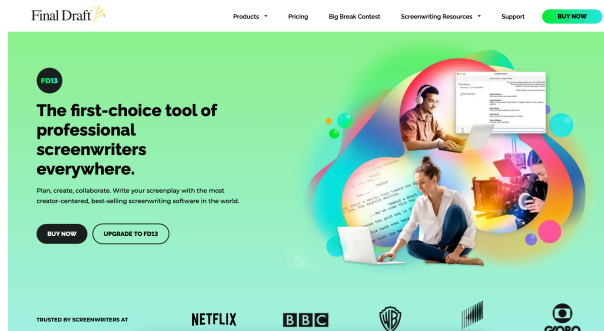
Here are our favorite AI tools that you can use for each of the above.

Scripting & Greenlighting

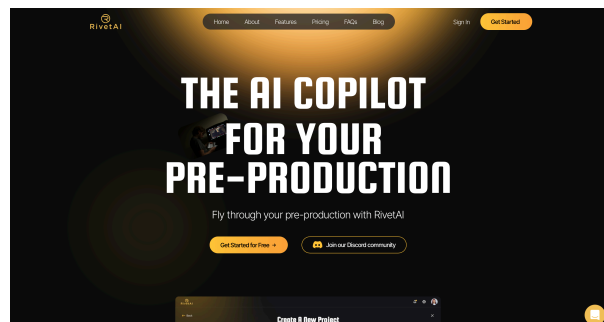
[Scriptbook](#): Scriptbook is a tool for developing and greenlighting scripts. It provides artificially intelligent script analysis, AI driven content validation, and automated story generation. It predicts financial performance by market trends, audience preference, and other data, and markets itself as an improvement of the human greenlighting process, eliminating false positives and bias while maximizing a film's potential for critical and commercial success. The list of [projects it has screened](#) is interesting.



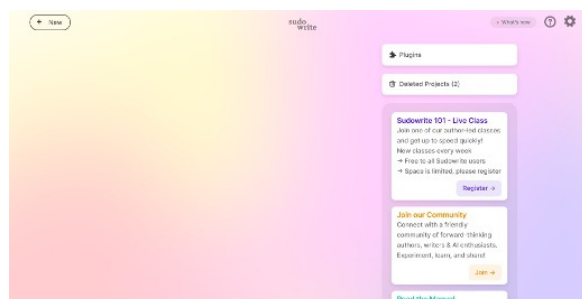
[Final Draft](#): This AI-enabled tool is already popular and affordable. It streamlines the scriptwriting process, particularly in managing character dialogue and plot development. Industry standard formatting is embedded.



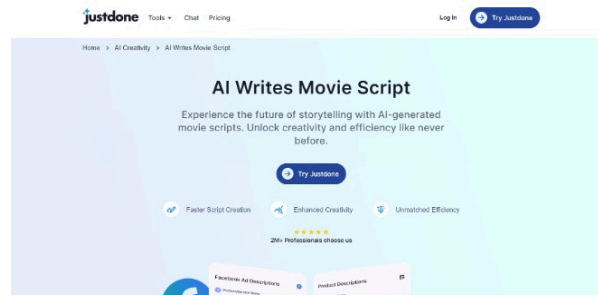
[Rivet AI](#) aims to be your one resource for pre-production. It generates script analysis, coverage reports, summaries, and character breakdowns. It creates budget sheets, optimizes resource use, drafts shooting schedules, and tracks financial progress. It's a customizable tool with a free trial and pricing based on project volume.



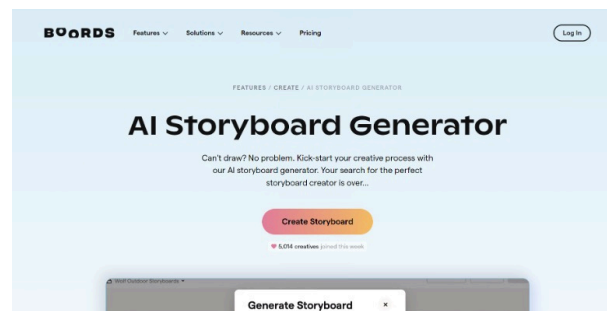
[Sudowrite.com](#): A novel/screenwriting AI that'll help you write for many genres, giving ideas for what to write next. It can help brainstorm some ideas, give more description to what you have already written, and also rewrite something you may think could be said differently. Sudowrite has a free option but allows for three paid tiers being paid either monthly or yearly.



[Justdone](#): An AI writing assistant that can help write for any form of media you need, whether it's an article, social media post, or advertisement. Pricing is weekly, monthly, or yearly.

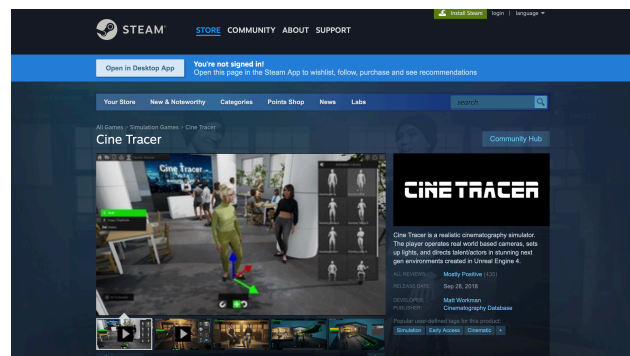


[Boords](#): Boords is an AI storyboard generator that not only creates an entire story with the text prompt you give it, but also offers visuals alongside it to demonstrate what the shot may look like.

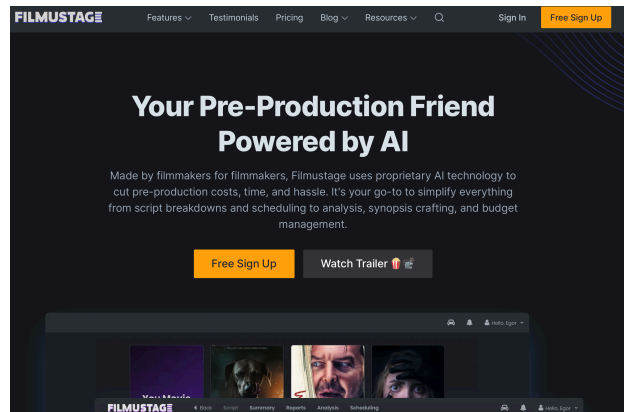


Planning & Shooting

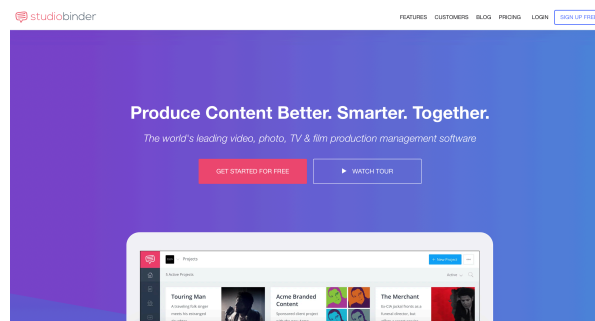
[CineTracer](#): Is a cinematography simulator, a unique tool that allows you to plan shots in a virtual environment and render samples before actual shooting. It's available on Steam, and it's still in early release mode. But we're including here for its potential.



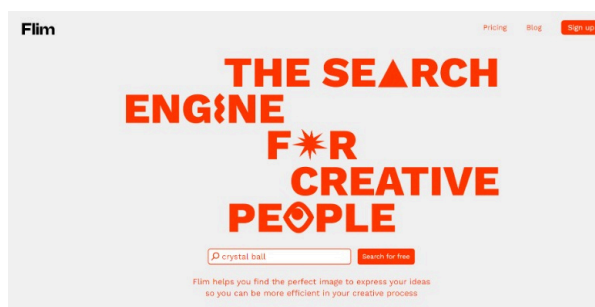
[Filmustage](#): Filmustage will take you from raw script to your shoot by breaking down your script into scenes and elements, generating tags and synopses for each scene, and creating a shooting schedule for you. Pricing is based on volume of projects.



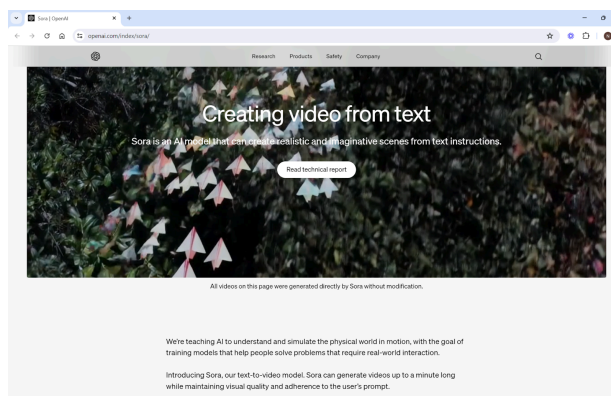
[StudioBinder](#) is already popular for a reason. It has everything you need to quickly plan your production: create shot lists, build call sheets, design mood boards, populate production calendars, manage crews, and facilitate communication about all the above. Automation organizes and produces all the above, and brings in all the relevant context into a personalized interface for each crew member. Monthly pricing is based on volume of projects.



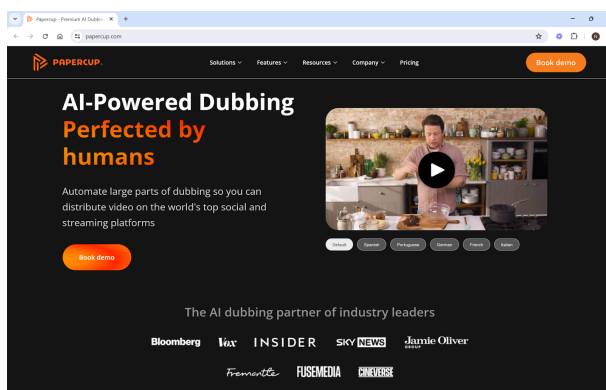
[Film.AI](#): Film.AI is a free AI that allows you to search up almost any frame from any movie you can think of, so if you need ideas for a storyboard or you need to figure out ideas for how a shot should look, you can refer to how other people might've done the shot.



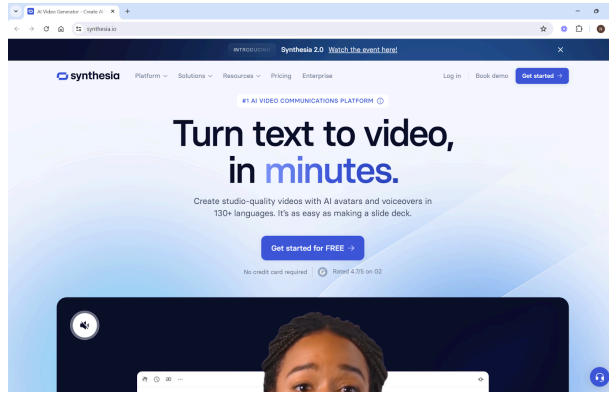
[Sora](#): This mind-blowing text-to-video generator from OpenAI has already terrified the industry. It's the epitome of what AI filmmaking can be, but its full potential is still unknown. This is the technology that woke up the industry to the risks and opportunities of AI.



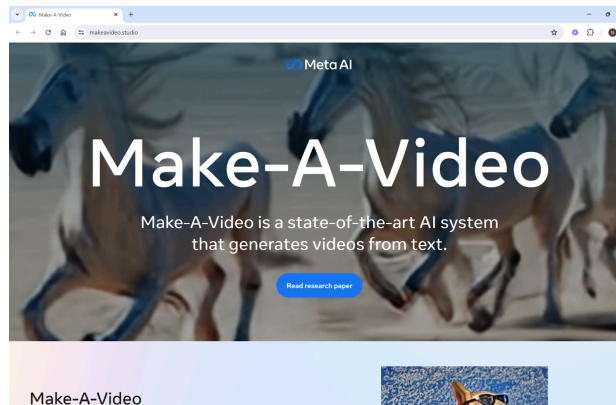
[Papercup](#): A cost-effective and innovative AI tool specializing in easily replacing your original audio with a synchronized translation in another language. Experts can adjust the accuracy and inflection of the translated audio using synthetic voices while preserving the original speaker's voice and emotions. Productions can expand their audience by making content accessible to non-native speakers through dubbing with transcription and subtitles.



[Synthesia.io](#): An AI video creation platform that provides text-to-video capabilities. It allows creators to make high-quality videos simply by inputting a text prompt to receive a lifelike, customizable video. [Synthesia.io](#) offers over 130 languages and 160 AI virtual avatars. It's as simple as creating a script, customizing your video, and clicking generate. Users also have the option of seamlessly integrating content with their LMS, LXP, or other authoring tools.

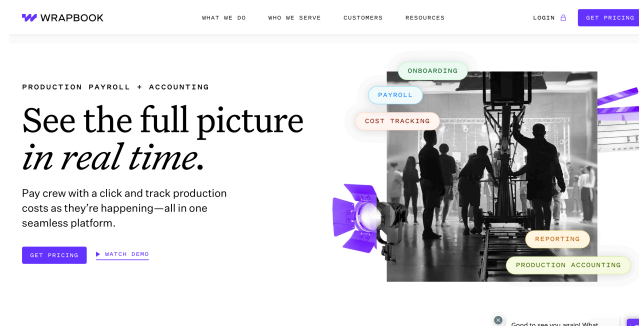


[Make-A-Video](#): Make-A-Video, powered by Meta, fuels progression with text-to-image generation bringing your imagination to life. Through a text prompt, AI will generate images and videos with surreal, realistic, or stylized techniques. Using an intuitive interface, users can also create variations of high-quality videos by adding motion to a static image(s) without the need for extensive editing or equipment.

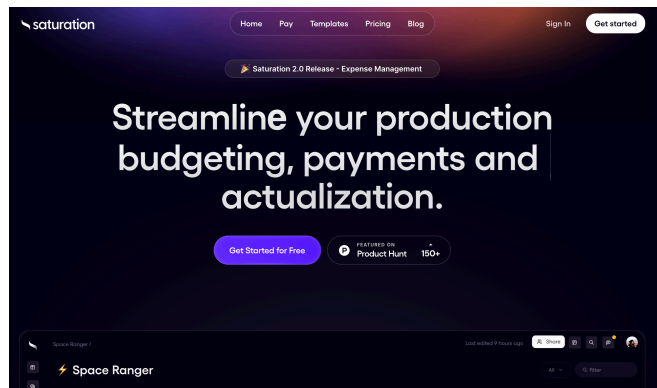


Payroll & Budget

[Wrapbook](#): Wrapbook handles all your budgeting and payroll needs; it's a faster, easier paymaster. It integrates with your accounting software to manage payroll costs and POs in real time, allows you to pay your people with a click, and can generate any report you'd need at any time. You can also build people profiles for your team to make working with them again easier—and preferable.

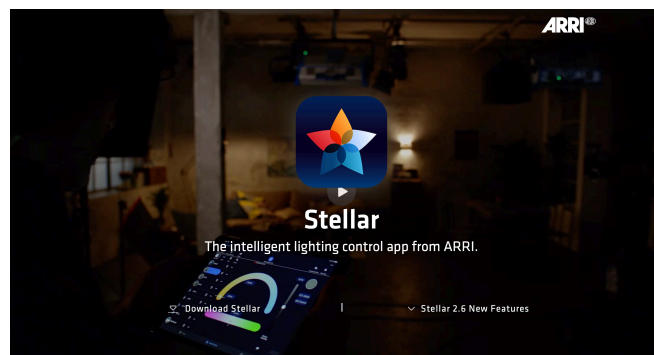


[Saturation](#) is a collaborative budgeting tool that allows for tracking and adjusting line items in real time. It's great for organizing multiple projects at once, and brings your teammates into the process securely.

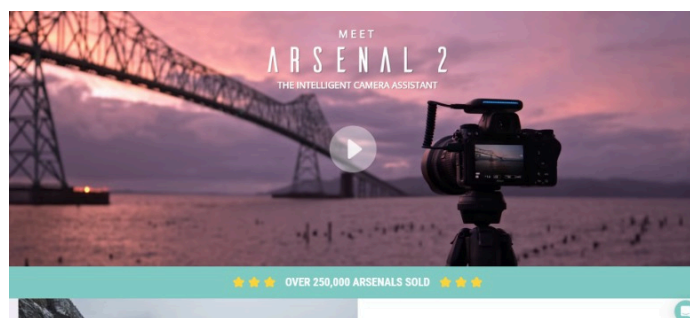


On Set

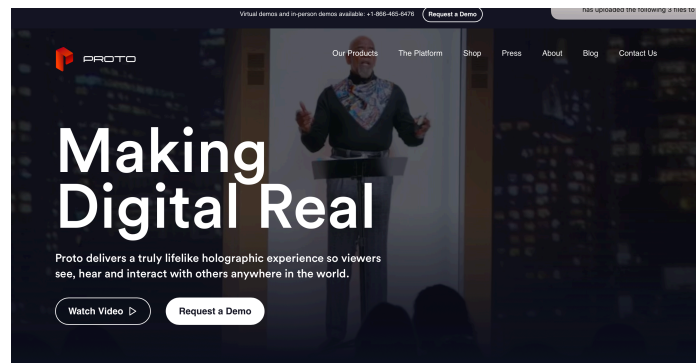
[ARRI Stellar](#) is AI-assisted lighting design. It has a slick interface and takes care of DMX settings to control lighting setups via phones or tablets. Pre-visualize lighting and change the entire set's look and feel with one click. Save what you like and replicate instantly in future shots.



[Arsenal 2](#): Arsenal 2 is an AI for your camera. It reads the raw sensor data that the camera receives, interprets it, and makes adjustments to make the camera look as good as possible and all you have to worry about is getting that shot.

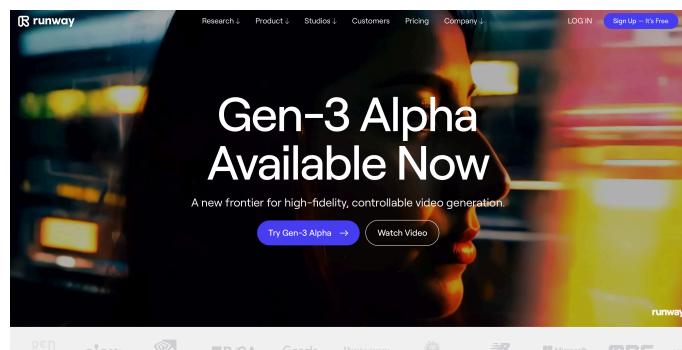


[Proto](#): Proto is the world's first and only holographic communications platform with its own hardware, software, and app ecosystem. While not technically "AI" upfront (it's in the background), this super cool platform has already been utilized in a number of TV projects including the Grammys and America's Got Talent.

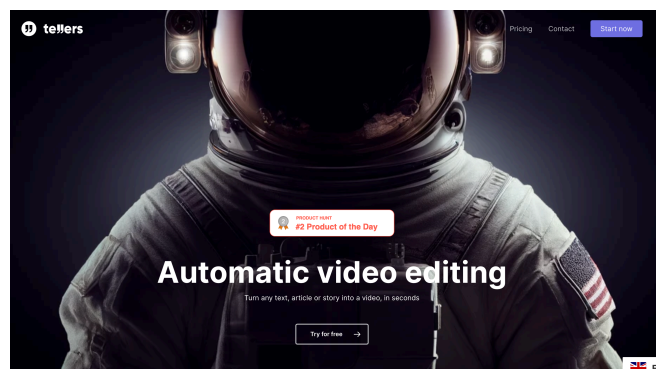


Editing & VFX

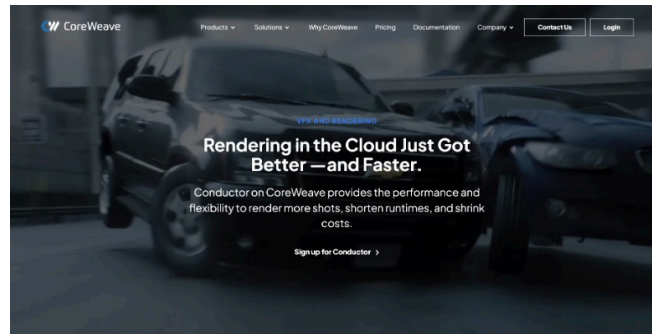
[Runway ML](#) has the potential to be transformational. It creates generative AI models that allow creatives to generate original images and animated videos, and assists in editing and VFX and CGI—all with no coding and limited technical knowledge require for us. Pricing feels reasonable for the work it can do.



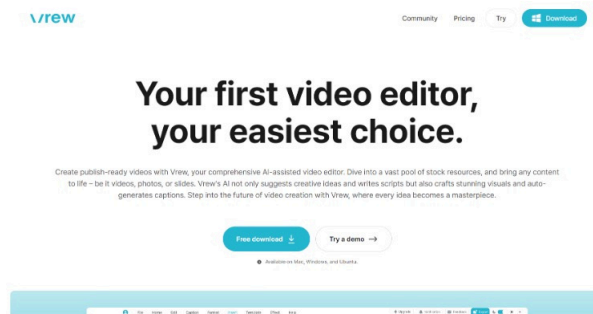
[Tellers.ai](#) is an automatic video editing software that will turn any text into a video in seconds. It's also great for articles, posts, and any other text that would be more impactful as multimedia.



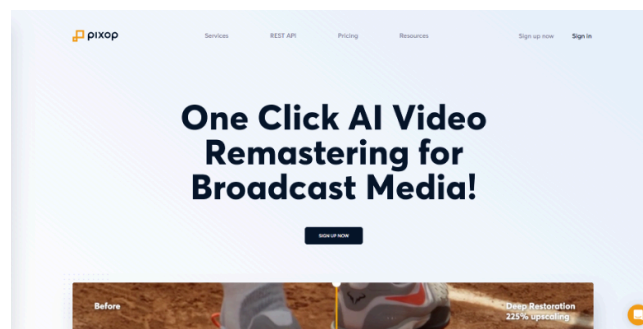
[CoreWeave](#) provides digital workspaces for editing teams that, with the help of ML and AI, renders more shots in less time, reduces run times, and saves cost and hours.



[Vrew](#): Vrew is a video editor that allows you to edit your videos via text. Moreover, the captions are transcribed from the video. Deleting the words within said caption will delete the video and audio from the film making editing much more efficient and simpler. Vrew has a free option but also has paid subscriptions which give you more perks either monthly or annually.

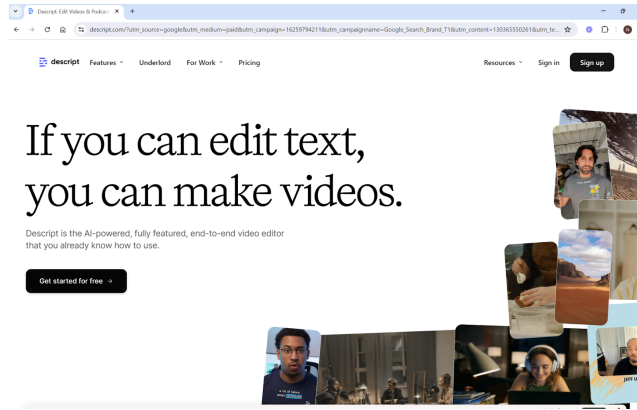


[Pixop](#): Pixop is an AI remastering tool that enhances film by fixing any noise or grain. Pricing is not on a subscription basis but paid by how much you use.

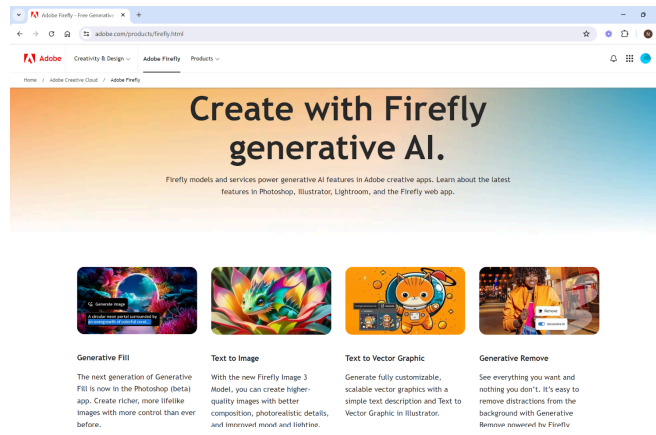


[Descript](#) is an all-in-one audio and video editing platform designed for editing videos through powerful transcriptions. It allows for streamlining precise edits in production stages, enhancing efficiency, and letting

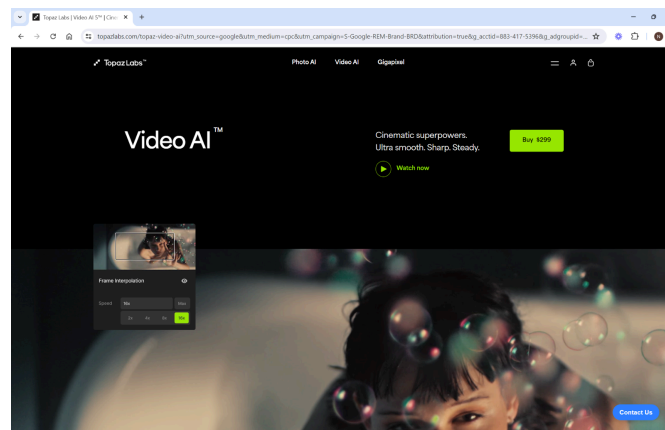
teams work together in real time. Users can edit sound, translation, and video with a simple click of a button. Descript offers a free option, but also other paid tiers for more advanced content.



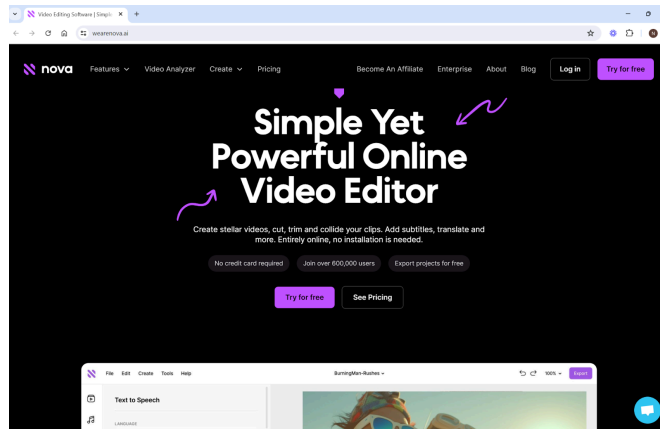
[Adobe Firefly](#): A suite of generative AI tools created to allow transformation through your text to images, change the visual output of your content, and even compose custom graphics. Enhance your creative workflows by streamlining your art concepts while reducing costs.



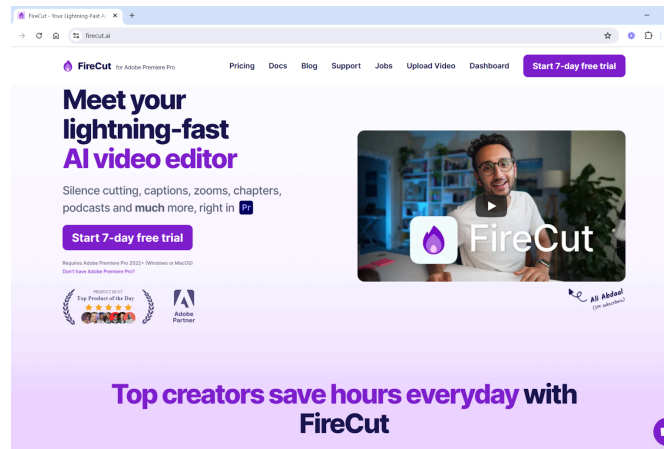
[Topaz Video AI](#): A cutting-edge software that integrates AI to enhance your video quality. Topaz Video AI lets you easily upscale, denoise, compress, and create new frames without altering camera settings. There are 24 different models to choose from when editing your videos that gives you the best resolution, upscaling, and alleviates all unwanted artifacts. New productions can meet the highest quality standards with this tool's advanced capabilities.



[Nova.ai](#) offers automated editing features (including scene detection, transcription, translation, and subtitles) allowing you to simply search through a sea of visual and audio content using keyword searches. Focus on creativity and storytelling more efficiently through hundreds of different features. Nova.ai is changing the game for creators of every sector and size.

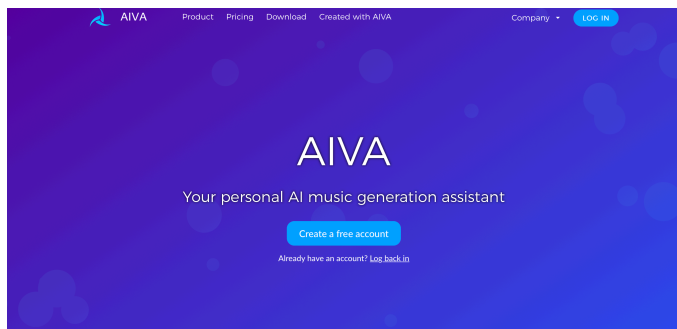


[FireCut](#): will save you the hassle of the tedious task of editing. Cut your clip silences, get your pro-level captions with just a single click, create and add automated zoom cuts, or simply transcribe your audio to 50+ language options.

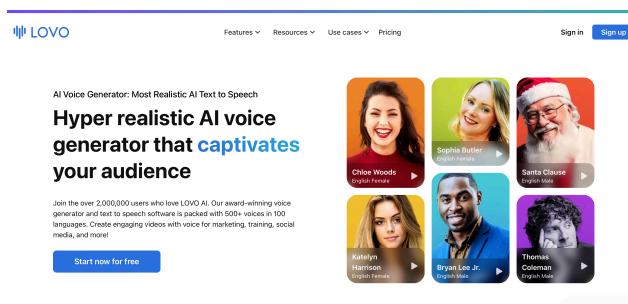


Audio & Music

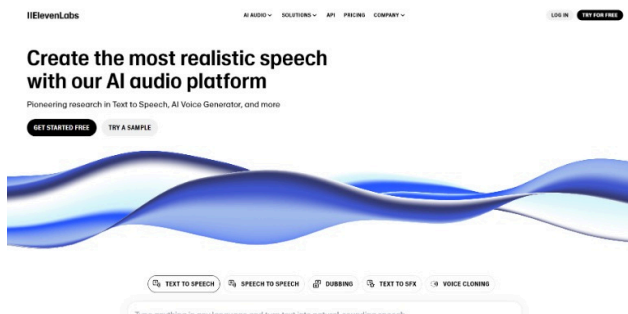
[AIVA](#): An AI-powered music composition tool that can generate original scores for film and television projects. And very affordable.



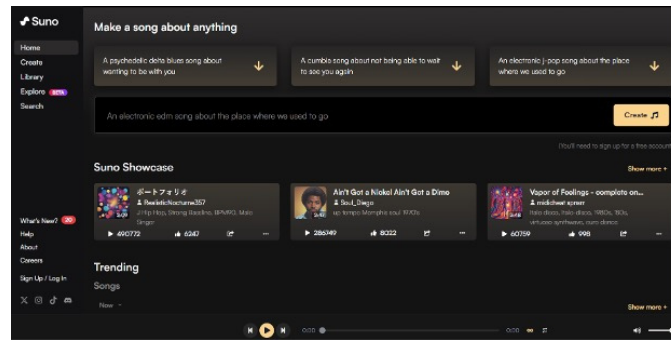
[LovoAI](#): Over a million people already use Lovo for realistic text-to-speech generation. It has a free plan or an affordable monthly paid plan that can create over 500 voices. It also allows text cloning—although the new SAG-AFTRA deal requires consent from the actor to do so.



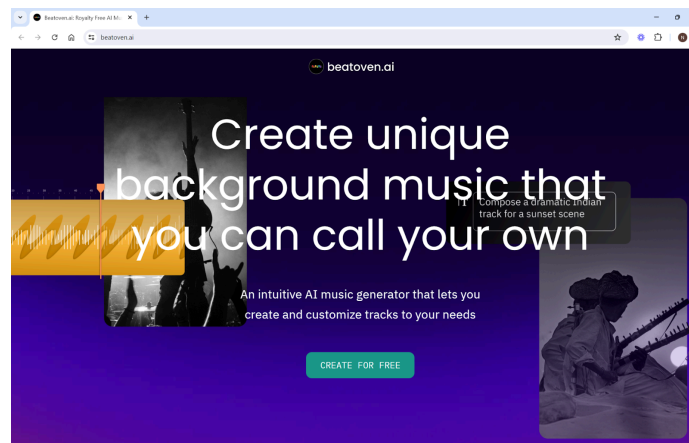
[ElevenLabs](#): Allows not only for Text to Speech but also dubbing (translates the audio to another language with their voice), text to sfx (makes AI sound effects with text prompts), and audio clones (creates an artificial simulation of a person's voice). It has a free option but also paid tiers for more options.



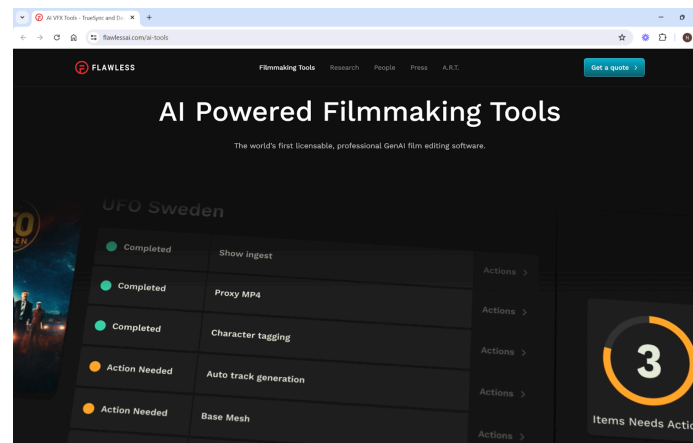
Suno: A free AI that converts text to music and can also create original pieces of music for any film. Suno is being sued by some of the major labels, however. At the same time, Google is known to be developing similar technology.



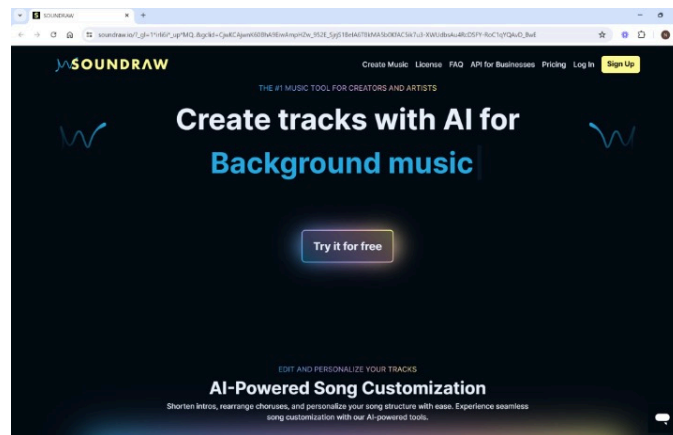
Beatoven: An AI-powered music composition and generation platform that allows you to create and tailor music to your specifications. All you have to do is specify the mood, style, and length of the track, and AI will generate a royalty-free, custom composition. There is also the option of making your own track through the text-to-music feature. Instead of sourcing music, Beatoven eliminates all those expenses. Create your own unique music, even if you have no music skills whatsoever.



TrueSync: A tool by Flawless AI uses AI to create seamless lip-synced dialogue to match any language and subtitles. Dubbed content can appear natural and immersive without having the distractions of poor lip sync. TrueSync's features can help to unlock a global audience while still giving viewers a good experience.



[SOUNDRAW](#) is an AI-driven music generation tool. Allows for creating, editing, and personalizing royalty-free music you want with just a few clicks. In-house producers compose beats to instruct AI models with, making all tracks safe for commercial use.



More and more services and tools are coming online every day so you might check out the [Production.Ink's AI Toolkit](#) which is updated regularly for the latest and greatest new AI tools for production.

Final Thoughts

In today's creative industries, the rise of generative artificial intelligence is impossible to ignore. Whether the production industry actively embraces it or not, it is here to stay—and those who use it well will have a massive creative and economic advantage.

These new AI tools offer impressive capabilities, from generating ideas and images to facilitating brainstorming sessions. However, their power has sparked concerns about the future of creative professionals in fields such as digital art, graphic design, copywriting, and the entertainment industry.

We remain neutral on whether Generative AI in production is beneficial or detrimental. Its arrival is inevitable and unstoppable. However, we can confidently state this: Those who adapt to this new reality stand the best chance of success, while those who disregard it risk being left behind by this technological revolution that has already transformed the industry. - *The Editors of Production.Ink*



About Production.Ink

Production.Ink is a new 2X a month e-newsletter and web site for entertainment industry production executives. Our mission is to provide news, information and resources for production executives making TV, films, commercials, and digital video content. While our content is valuable for creative executives, our focus is on helping those creators responsible for the nuts and bolts of production—from the latest business and finance industry news to resources they need—in order to bring in their productions on time and under budget.

Production.Ink was started by and for production executives who understand the unique challenges we face in today's fast evolving media landscape. Whether it is AI, streaming, virtual locations, or traditional production, our team has been in the trenches and can provide insight and analysis to help others get the job done.

We would love to hear from you! www.production.ink | info@production.ink



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