

## Director of photography



## AI overview

AI is starting to reshape the role of directors of photography (DoPs) by automating technical tasks like camera adjustments and colour grading. These tools could free up more time for DoPs to focus on creative decisions, such as interpreting emotions and ensuring visual storytelling. As AI tools advance, DoPs could begin to oversee AI-driven systems for camera and lighting setups, enhancing efficiency while maintaining control over artistic elements.

To prepare for the future, DoPs could integrate AI for tasks like focus tracking and initial colour grading. AI could also help streamline data archiving and assist in virtual production, allowing DoPs to adapt to evolving filmmaking technologies while enhancing their creative contributions.

## How can I prepare for the future?

These are some areas that directors of photography may need to understand in the future.

Future Tech	Description	Resources for learning
<b>Generative Tools</b>	Automated creation of production simulations, AI tools generating video content with a high degree of control, AI tools demonstrating camera moves and framing during previsualisation.	Check out ScreenSkills Training, events and opportunities page for up to date courses that provide guidance for how to utilise generative AI tools.
<b>Autonomous Robotics</b>	Developments from traditional motion control such as Stunt robotics, autonomous robots and physical manipulation robots can allow onset SFX to take place where it was too dangerous, or simply not previously possible.	Bow Robotics software and development platforms, are increasing access to a much wider market, and simplifying the process of motion control. Udemy and Coursera learning platforms
<b>3D Volumetric Capture Technologies</b>	Capturing live performances directly into a 3D pixel format and 3D mesh based formats, allowing re-positioning of cameras after the recording has been made.	Understanding of Gaussian Splatt techniques and Mesh based volumetric capture technologies, many good scientific papers on the subjects.
<b>Colour Pipeline</b>	The capture and reproduction of colour in a controlled and predictable manner, and the conversion between different colour spaces and EOTFs.	Check out ScreenSkills Training, events and opportunities page for up to date courses on colour, including VP that lets you practice taking content through the whole colour pipeline.
<b>Live Events Technologies</b>	Tooling and technologies that are commonly used in the live events ecosystem, such as automated rigging, motorised lighting and LED/projection.	Academy of Live Technology deliver training (both short courses and HE) around delivery, management and design of live events systems.
<b>Metadata Tagging and VFX Integration</b>	Automated metadata tagging for seamless post-production workflows.	Academy of Live Technology courses on using automation in filmmaking.
<b>Real-Time Exposure and Colour Monitoring</b>	AI systems that monitor frame consistency and exposure balance on set, giving warnings or indicators of potential issues.	Academy of Live Technology courses on using automation in filmmaking.
<b>Self-Hosted AI Models for Privacy</b>	Local AI systems for secure data processing and visual concept creation.	GitHub resources; YouTube guides on self-hosting AI.

## What AI tools can I use right now? – Efficiency & workflow opportunities

### Pre-production

**Chat-based language models:** AI tools could help turn notes into detailed shot lists, expanding initial thoughts into full planning documents.

**Image and video generation:** AI can generate previsualisations of shots, mood boards, and design elements quickly. Self-hosted tools could ensure data privacy while producing bespoke results.

**Data labelling and archiving:** AI could assist in organising and labelling data, making it easier to archive scripts or storyboards for future reference.

### Production

**Camera drones with AI:** AI-driven drones could assist with automatic framing and obstacle avoidance, making complex shots easier for even inexperienced pilots.

**Camera systems with object recognition:** AI could enhance camera systems with autofocus, tracking, and stabilisation, allowing operators to focus on intent rather than manual control.

**Colour grading AI tools:** AI could create initial colour grades, enabling instant previews of graded footage on set, integrated with existing colour grading software.

**Virtual production workflows:** AI could help streamline colour pipelines and improve virtual production setups, allowing more control over the shooting environment.

### Post production

**Generative tools for pre-visualisation:** AI could generate video content and simulate camera moves during previsualisation, enhancing planning and creativity.

**Autonomous robotics:** AI-driven robots could take over risky tasks, such as stunt work, making complex shots safer and more achievable.

**3D volumetric capture:** AI could capture performances in 3D, allowing camera movements and re-positioning during post-production.

**Real-time exposure and colour monitoring:** AI could monitor frame consistency and exposure balance on set, giving real-time feedback to ensure visual quality.