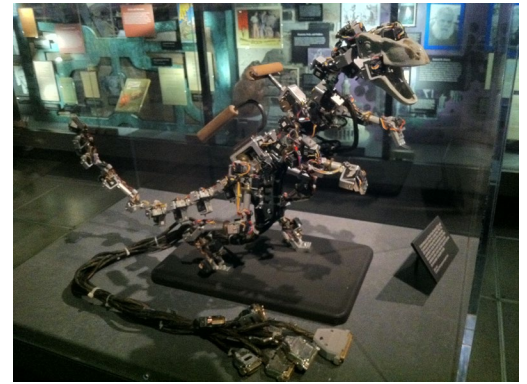


# Filmmaking

Lots of different types of engineers are involved in filmmaking! They can be found doing things like making props, animating or creating lighting, sound and special effects.

Engineers use their skills to create realistic **robotic** characters, environments and movie sets, often involving **mechanical** and **electrical engineering**. On some films, robots have even been involved behind the scenes, for example holding cameras and lights!



*Jurassic Park Velociraptor direct input device.* Image: Matt Mechtley from Heidelberg, Deutschland, [CC BY-SA 2.0](#), via Wikimedia Commons

The lifelike ‘robotic’ puppets sometimes used in films are designed and operated using **animatronics**. They can be used to create **imaginary creatures**, or scenes that would be impossible or too dangerous using real-life people or animals.

Engineers are also involved in setting up **special effects**. For example, they might make sure a scene using them looks realistic and is filmed safely.



An engineer works on special effects on a film set. © This is Engineering. Used under [CC BY-NC-ND 2.0](#) via Flickr.

Engineering **light and sound effects** well is really important to help tell the story of the film.



An engineer edits film special effects on a tablet. © This is Engineering. Used under [CC BY-NC-ND 2.0](#) via Flickr.



Ingenious



Different approaches can be combined in the same film. For example, the film *Jurassic Park* combined techniques such as computer animation and animatronics to show dinosaurs on-screen, and 'Dinosaur Input Devices' were models used to send information to computers to animate dinosaur characters on-screen.

You can find out about the job of a **real-life Broadcast Engineer** here: <https://www.thisisengineering.org.uk/meet-the-engineers/jahangir/>

This Building to Break Barriers session is based on the Royal Academy of Engineering's '**Engineering in the Movies**' [resources](#) and [resource guide](#), where you can find more information about the roles of engineers in making films.

## Minecraft challenge

Build a prop, piece of equipment or effect that an engineer would be involved with making or using in filmmaking. For example, could you create an animatronic puppet, set up some sound effects or design and put on a firework display?

Try our engineer Daisy's [YouTube videos](#) about redstone to see if you could include this in your design!



Observer and redstone in Minecraft. Image: Daisy Bristow