Intro: Widescreen vs Fullscreen*

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1 Widescreen vs Fullscreen

Many movies today are filmed with an aspect ratio of 16:9 (width:length) to allow for wider shots. Movies filmed in this format are generally referred to as **widescreen**. However, most older televisions have an aspect ratio of 4:3, and most television programming is presented in the 4:3 format.

This discontinuity in aspect ratio presents a problem to TV programming stations as well as the movie industry when trying to display movies on standard TVs. The two most popular solutions are:

1.1 1) Letterbox

Include the entire 16:9 frame inside the 4:3 frame, resulting in black bars at the top and bottom of the screen. This method preserves all of the information from the original frame, but results in a large portion of the 4:3 display being used to display no information.

1.2 2) Crop

Crop the sides of the 16:9 frame to generate a 4:3 frame that completely fills the standard TV frame. This method results in a **fullscreen** movie that completely fills the 4:3 display.

However, this method loses a substantial portion of the information from the original movie frame, potentially eliminating important scene elements.

The following modules will focus on developing an improved version of solution number 2 by computationally finding the region of interest in the scene and preserving this information when cropping.

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