

CameraSim Pro User Guide

CameraSim Pro (/apps/camerasim-pro/) is a DSLR simulator designed for use as an engaging visual aid for photography instructors. It can also be helpful for photography students who do not yet have access to a real DSLR camera. My hope is that this tool facilitates learning and inspires instructors and students alike to go out into the real world and capture amazing photos.

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CameraSim Founder

System Requirements

Until I can get better definition around specific system requirements, a good rule of thumb might look like this: If your computer is less than 5 years old, you should be able to run CameraSim Pro (/apps/camerasim-pro/) just fine. (As a point of reference, CameraSim Pro was developed on a 2013 iMac and a 2012 Macbook Pro, and runs smooth on both machines.) I'll update these system requirements as better data becomes available.

To get the most out of CameraSim Pro, read about its features below:



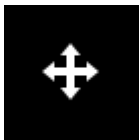
The viewfinder shows the camera's perspective of the scene, but it's also the main area of user interaction. Clicking + dragging with a View control (explained below) will let you compose your shot, while "regular" clicking (not dragging, in other words) will auto-focus the lens according to what is in front of the camera's center focal point. Note that only the center focal point is used for auto-focusing.

Use the following controls to adjust the position and orientation of the camera in the scene.



Click the Orientation icon to switch between landscape and portrait views. You can also switch between these views by pressing the O key.

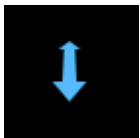
Using the View Controls below involves first selecting a control and then clicking + dragging in the viewfinder window.



The Look tool lets you to look in any direction from your current position.

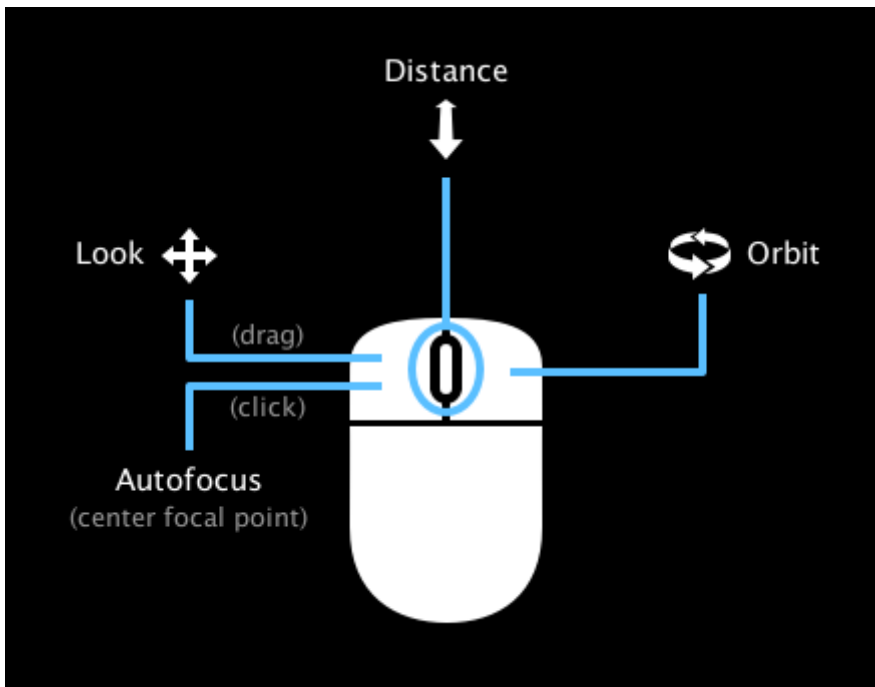


The Orbit tool lets you to orbit around the active subject. Note that orbiting will be affected by collisions with any objects in the orbit path. Also note that any significant orbit movement will “reset” the Look position to its default position. (This is to prevent orbiting from becoming disorienting -- it just feels weird to not be looking at the thing one is orbiting!) A best practice for composing a shot is to first set the orbit position, then reframe using the Look tool if necessary.

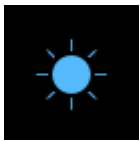


The Distance tool adjusts the physical distance between the camera and the subject. Like with the Orbit tool, the Distance tool behavior will be affected by collisions with other objects in the camera’s path.

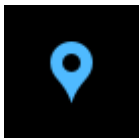
Highly Recommended: Use multiple buttons of your mouse or touchpad!



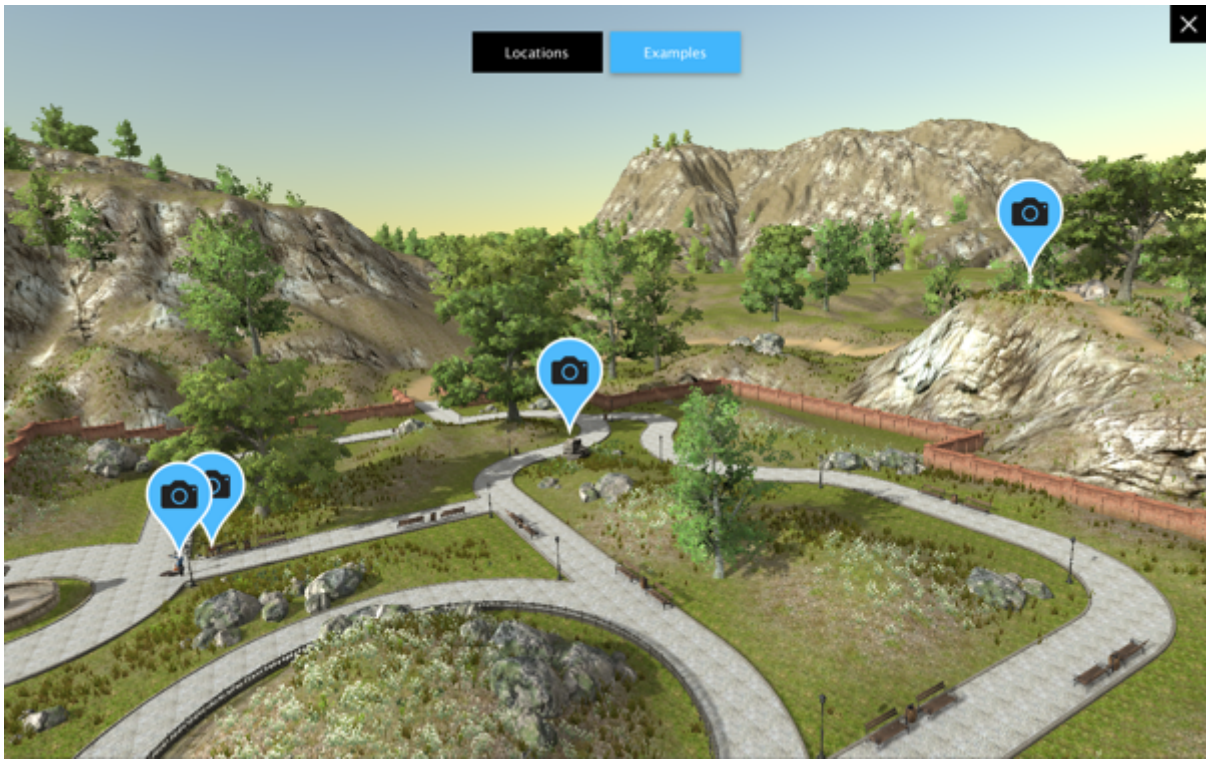
While using the View controls individually will work, it's a lot of clicking. A better way is to use a multi-button mouse or multi-button/multi-gesture touchpad. For example, with the Look tool selected, left-clicking will engage the Look behavior as expected, but right-clicking will engage the Orbit behavior. Scrolling -- whether that be via the scroll wheel on a mouse or the scroll gesture on a touchpad -- will engage the Distance behavior. Combined with single-clicking to auto-focus and pressing your spacebar to snap the shutter, composing and snapping a photo and can be done very quickly and easily.



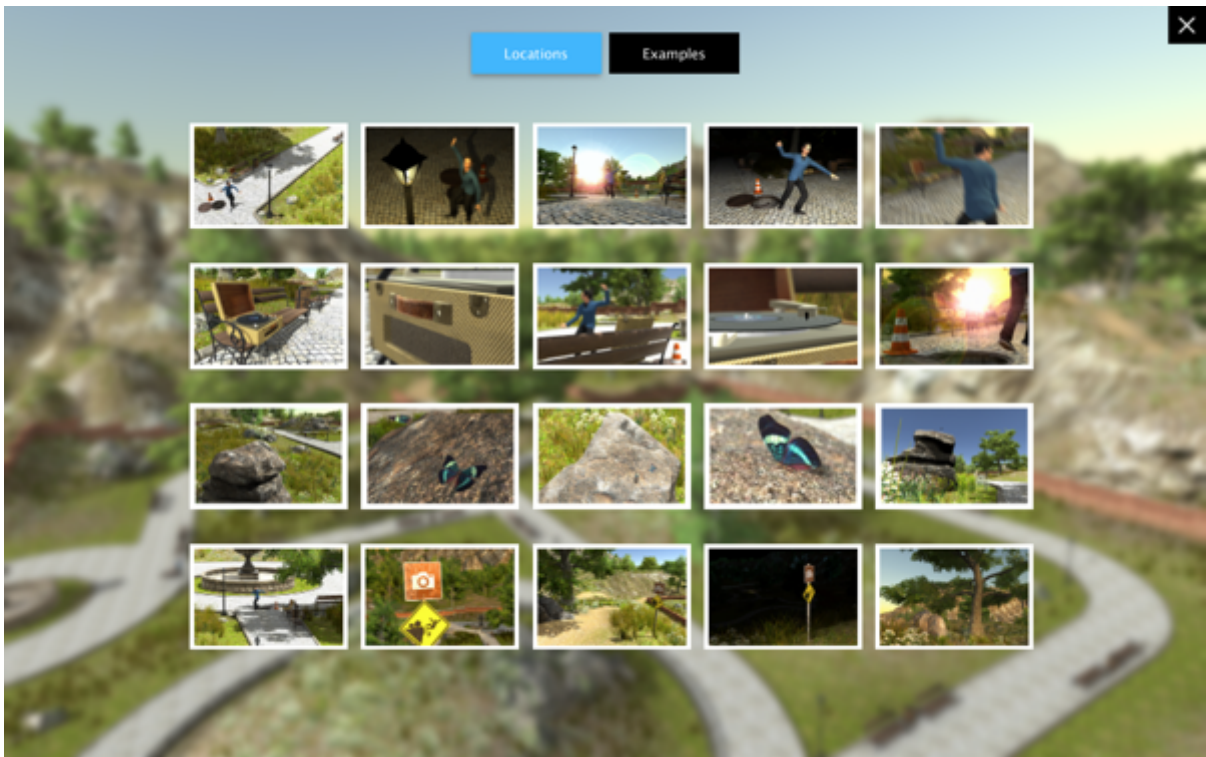
The Light icon spawns a pop-up with a slider control to adjust the time of day. The sunlight will be a warmer color when the sun is closer to the horizon and less warm when set at "high noon." Note that if you make a drastic change between lighting levels, you might see a slight delay in the lighting effect while the scene recalculates ambient light levels. Close this pop-up by clicking the X or pressing your Esc key.



Clicking the "pin" icon opens the Locations and Examples screen.



Clicking a Location takes you to one of the preset locations and loads some general camera settings.



On the Examples screen, clicking a photo loads the subject and the camera settings that produced the image in the example photo.



Click the Fullscreen icon to enter and exit fullscreen mode. Note that fullscreen mode is more processor intensive (i.e. more work) for your computer, so avoid fullscreen if the performance is undesirable.

Current Lens: 18-55mm f3.5-5.6

Click the lens name to choose a lens for your camera.



There are currently three different lenses representing the most common lens types: a standard zoom lens, a telephoto zoom lens and a fixed focal length/prime lens. Selecting a different lens will automatically close this pop-up. To close the pop-up without changing your lens selection, click the X or press your Esc key.

Use these controls to change the settings of your camera:

Focal Length: 55mm

Focal Length: This slider adjusts the focal length of the lens. The value range will vary according to which lens is currently active. Note that the field-of-view of any given focal length is based on that of a “cropped” sensor (vs. full-frame), as cropped sensors are so common in consumer-level DSLRs.

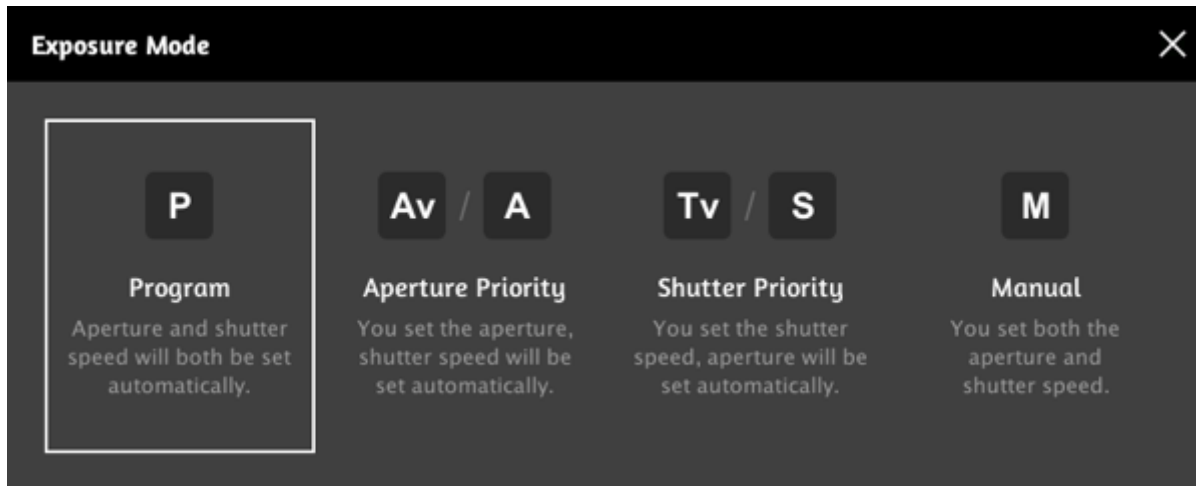
Focus

Auto

Focus: Manually adjust the focus with this slider, or click the Auto button to auto-focus. Note that only the center focal point in the viewfinder is used for auto-focusing. TIP: rather than clicking the Auto button, just single-click in the Viewfinder to auto-focus.

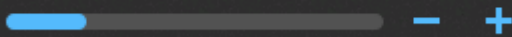
Mode: Program

These options dictate how your camera will calculate the exposure of the resultant photo.



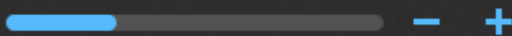
Selecting a different exposure mode will automatically close this pop-up. To close the pop-up without changing your exposure mode, click the X or press your Esc key.

ISO: 200



This slider adjusts the ISO level. You can also adjust the ISO amount using the - / + buttons in full stop increments. Note that there is no “auto” setting for ISO, and ISO can be set while in any exposure mode.

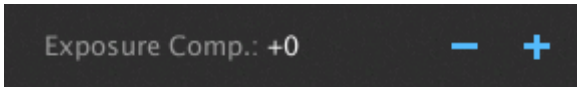
Aperture: f/6.3



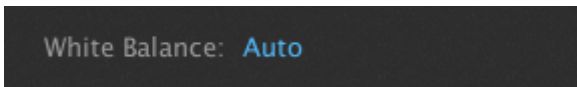
Use the Aperture slider to adjust the aperture/f-stop. The value range will vary according to which lens is currently active. You can also adjust the aperture/f-stop amount using the - / + buttons in $\frac{1}{3}$ stop increments. Note that Aperture can only be adjusted while in Aperture Priority and Manual modes.



Use the Shutter Speed slider to adjust the shutter speed. You can also adjust the shutter speed using the - / + buttons in 1/3 stop increments. Note that shutter speed can only be directly adjusted while in Shutter Priority and Manual modes.



Use the Exposure Compensation control to adjust the exposure target by plus or minus five stops. Note that Exposure Compensation is not available in Manual mode.



Select a white balance setting from the standard white balance options. Note that this feature is still in an experimental phase. For the time being, selecting "Auto" disables any white balance effect on the resultant photo. Selecting a different white balance will automatically close this pop-up. To close the pop-up without changing your white balance selection, click the X or press your Esc key.



Enable and disable the on-camera flash.



Simulate the camera being mounted on a tripod and thus eliminating the handheld camera shake. Note that when the tripod is enabled, the speed at which you can orbit or look around will be slowed. An icon in the lower right of the viewfinder will provide an extra visual cue that the tripod is enabled. The tripod can also be toggled on and off by pressing the T key.



A summary of the current camera settings will show at the bottom of the viewfinder.



Click the shutter button to snap your photo. Note that pressing your spacebar also snaps the photo.



A camera settings summary will be posted in the upper right of the resultant photo. Click the "return to camera" button when you are done reviewing your photo.



Click the Info icon to get support, contact and other information about CameraSim Pro. To close this pop-up, click the X or press your Esc key.

Known issues:

Thousands of hours have gone into making CameraSim Pro as accurate as possible, but some technical limitations and known issues exist. These include:

- Auto-focusing on grass/flowers is too computationally expensive and therefore disabled. Use manual focus if you wish to focus on these items.

- There is a technical limit to how much motion blur can be simulated, so the slowest shutter speed supported is one second.
- Related to the issue above, exposure calculations and simulations in near-dark and total-dark settings will not be entirely accurate. I'll continue to research ways to improve this for future releases.
- High dynamic range scenes (i.e. brightly lit and darkened areas in the same scene) are currently not simulated. I'll continue to research ways to improve this for future releases.





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