**Description:**

A camera mount that accommodates the Pi GS (Global Shutter) and HQ cameras with an attached 6mm 3MP Wide Angle Lens for Raspberry Pi Cameras. The mount can tilt up/down and swivel around a bolt that attaches the base of the mount to a flat surface. A [FreeCAD 1.0](https://www.freecad.org/downloads.php) compatible parameterized model is included here along with .stl files.

The [DIY golf launch monitor project](https://hackaday.io/project/195042-diy-golf-launch-monitor) is using these mounts for two Pi Global Shutter Cameras that capture the images for the monitor. Several variations can be printed—see the annotated printed-part image. One variation is relatively low for use with a camera whose up/down tilt is minimal. Another variation is taller, allowing the camera to be tiled down by at least 30 degrees. The model is parameterized, so the mount can easily be modified to fit other needs by modifying the parameters in the “Master Document” spreadsheet, such as the “GSCam2GimbalHoleHeight” parameter. Ensure that there will be sufficient clearance between the CSI ribbon cable on the bottom of the camera and the gimbal base of the mount.

Please consider supporting this work and the DIY LM project here: <https://ko-fi.com/PiTrac>

**Printing Notes:**

PLA or PETG works well with this mount.

Recommended print settings: 4 perimeter layers (less if the bolts are not expected to be tightened very much), 15% infill, grid infill patterns, no supports. For some printers, supports to help with the curved surfaces that rotate around the horizontal axes. See .3mf file. Does not required glue-stick or brim assists.

**Parts Needed for Assembly:**

| **Quantity** | **Hardware** | **Purpose** |
| --- | --- | --- |
| 4 each | 2.5M x 16mm  2.5 Hex Nuts | Pi Camera Attachment Bolts (camera to back plate) |
| 2 each | M4 x 12mm  M4 Hex Nuts | Pi Cam Gimbal Attachment Hinge |
| 1 each | M5 x 12  M5 Hex Nut | Pi Cam (Pan) Swivel Mount (on bottom of mount) |

**Note:** For the screws, stainless steel seems to be stronger than black carbon steel, though both can work. Especially in the stiffer PLA material, stainless is preferable because black carbon can break if torqued too much. For parts supply examples see [HanTof 525 Pcs 304 Stainless Steel M2 M3 M4 Phillips Pan Head Self Tapping Wood screws Assortment Kit](https://www.googleadservices.com/pagead/aclk?sa=L&ai=DChcSEwiLuLi4w9eJAxW8Ka0GHe7XF-QYABALGgJwdg&co=1&ase=2&gclid=Cj0KCQiAlsy5BhDeARIsABRc6ZvLmaSF7SMXMVEWsWj3rp8S5qOvISkRMdr9czJDXK6-_GcV_X18lyoaApxdEALw_wcB&ohost=www.google.com&cid=CAESVeD2Qt_A3T4eLbWpcXoKb1T4jyPt8OTe6U2I9Uze-kjy3MAArJhoS9pYvi39aDroogjezyRvCcOJ56x4hYKkL8BaTouv69VFkW3lUm7VcRcYOp8m49s&sig=AOD64_3FizAX65usODanOujaKxqh5_gQbg&ctype=5&q=&nis=4&ved=2ahUKEwj92Kq4w9eJAxU1JzQIHakTKO8Q9aACKAB6BAgEEAw&adurl=)., mxuteuk M2.5 Screw Assortment Set,M2.5 x 4/6/8/10/12/16/20/25mm Hex Socket Head Cap Screws Bolts Nuts Kit,400PCS 304 Stainless Steel Assorted Screws with Hex Wrench G035-M2.5, and [Besitu 1760pcs M2 M3 M4 M5 Metric Screw Assortment, Grade 12.9 Alloy Steel Hex Socket Head Cap Metric Bolts and Nuts Kit, Black Zinc Plated and Anti Rust Metric Screw Set with 4 pcs Hex Wrenches](https://www.amazon.com/dp/B0C38YFL3D?ref=ppx_yo2ov_dt_b_fed_asin_title)

**Assembly Notes:**

Start by placing the nuts in their positions. It’s easier to place each of the three nuts into its respective indent, and then temporarily place a strip of tape (e.g., scotch) over the nut to keep it in place while assembling the mount. Next, mount the camera to the backplate using 4 2.5M bolts and nuts. Then mount the backplate to the gimbal base using 2 M4 bolts. Finally, secure the entire mount to whatever base will hold it by using an M5 bolt.

The mount’s tilt and pan angles will generally stay put once the nuts are tightened, simply based on the friction between the parts. If the angles cannot be finely tuned, sanding the parts helps.