



3D Printed Action Figure Selfie

Created by Ruiz Brothers



<https://learn.adafruit.com/3d-printed-action-figure-selfie>

Last updated on 2024-06-03 03:39:42 PM EDT

Table of Contents

Overview	3
<hr/>	
<ul style="list-style-type: none">• Make a Selfie Action Figure• Edit sockets• Use different materials• Add Details• Parts	
3D Selfie	7
<hr/>	
<ul style="list-style-type: none">• Scan face with Photogrammetry• Process pictures• Clean Scan• Scale head• Measure ball joint• • Edit socket size• Align socket• Combine socket geometry	
3D Printing	10
<hr/>	
<ul style="list-style-type: none">• Parts List• Slicing Parts	
Paint Selfie	11
<hr/>	
<ul style="list-style-type: none">• Test paint• Dry brush• Paint details• Match figure textures• Complete!	

Overview



Make a Selfie Action Figure

Scan your face to make a 3D printable head for any toy figure!



Use flexible filament to make it safe for play. Paint and customize each figure to become your favorite action hero!



Edit sockets

Use our ball socket parts to build snap fit geometry for each figure. Use Tinkercad to easily scale and clean your head scans.

With three different sizes available to customize, it's easy to build your favorite hero that look as unique as yourself!





Use different materials

Experiment with different type of filament. The Groot figure was color matched by using wood PLA.

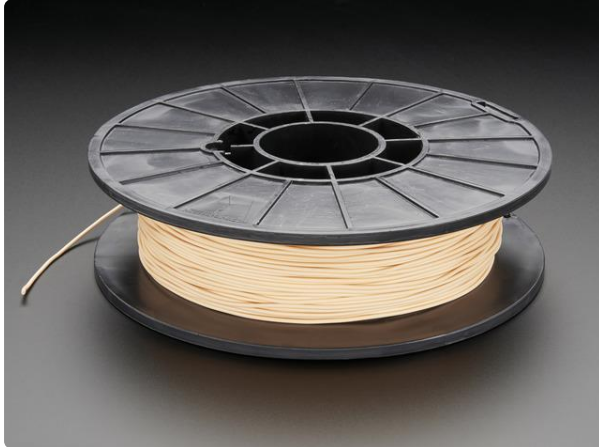


Add Details

Decorate each figure with a paint brush or air brush.



Parts



NinjaFlex - 1.75mm Diameter - Almond-Peach Smoothie - 0.50Kg

Looking beyond ABS? Tired of PLA? Open a world of possibilities, limited only by your imagination. NinjaFlex, a cutting-edge filament for 3D printers, is a specially formulated...

<https://www.adafruit.com/product/2383>



NinjaFlex - 1.75mm Diameter - Semitranslucent White - 0.50 Kg

Looking beyond ABS? Tired of PLA? Open a world of possibilities, limited only by your imagination. NinjaFlex, a cutting-edge filament for 3D printers, is a specially formulated...

<https://www.adafruit.com/product/2445>

1 x [Polycam](https://poly.cam)

<https://poly.cam>

Polycam photogrammetry Mobile App

1 x [Tinkercad](https://tinkercad.com)

[tinkered.com](https://tinkercad.com)

free web app for 3D design, electronics, and coding



3D Selfie

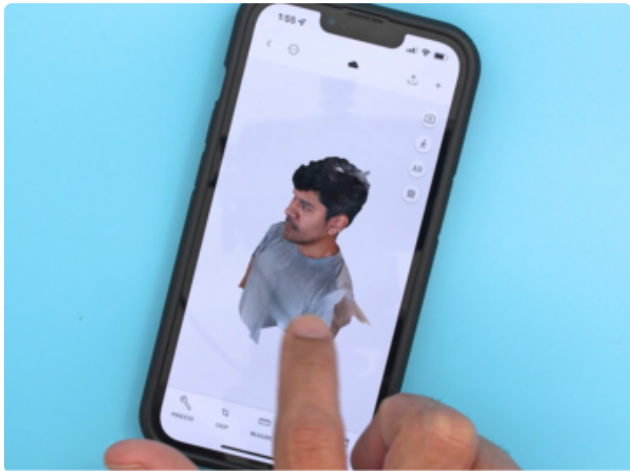


Scan face with Photogrammetry

You can import pictures or use the camera on your mobile to create the face geometry.

Use the Polycam app in photo mode to automatically snap pictures of all angles of your face or upload pictures taken from your library.

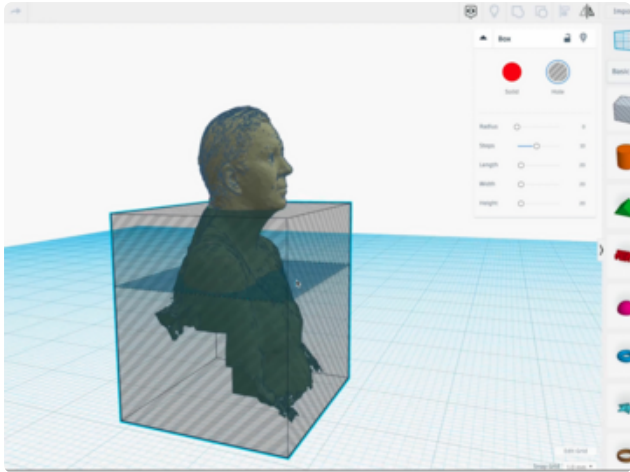
Take at least 50 pictures of all sides of your face. Include the top of the head and underneath the chin to ensure geometry is created for the whole head. Find a comfortable chair to sit while someone takes pictures. Make sure not to move once picture taking has started!



Process pictures

Upload photos for processing. Creating the mesh will take about 10 minutes after uploading all photos. You can preview and export an .obj file once completed.

Transfer the .obj file to a computer to clean up the mesh.

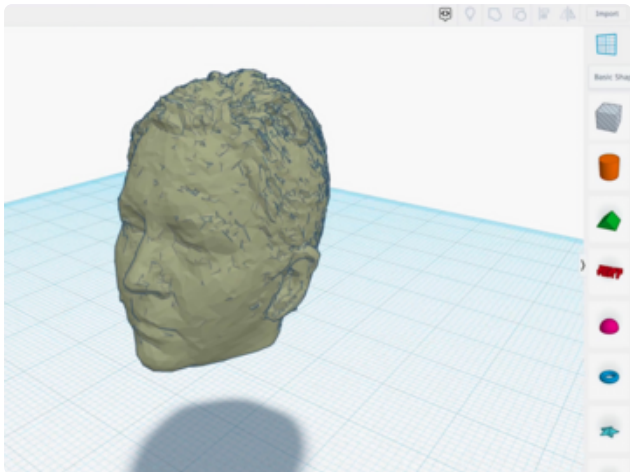


Clean Scan

Upload the .obj file to tinkercad.com to clean and add the socket geometry.

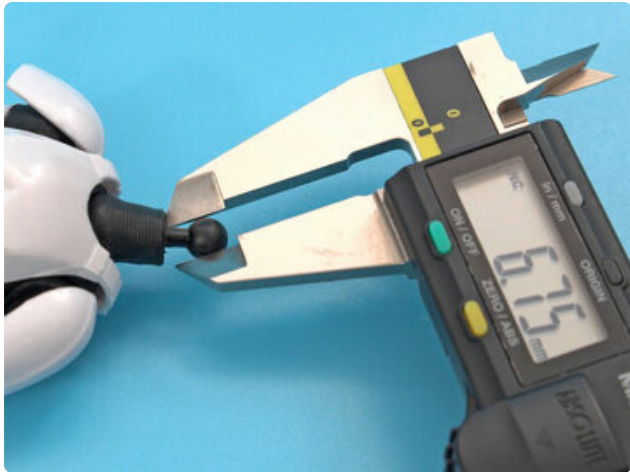
Create a box around the unnecessary mesh. Change the box mode to "hole". Shift select the box and the imported head mesh.

Select the combine option in the tool bar to isolate the head.



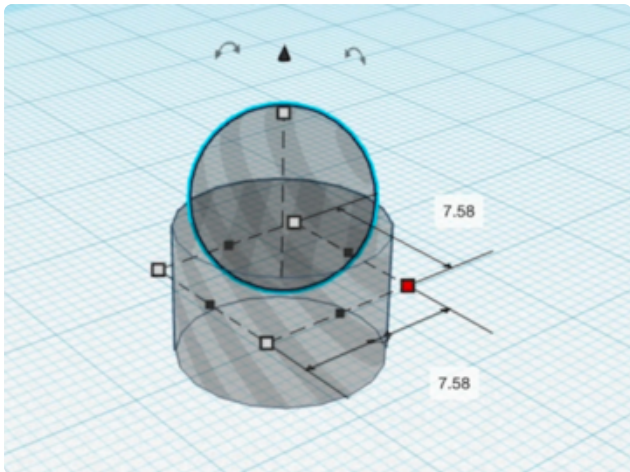
Scale head

Resize the head to closely match the same size as the action figure head, around 19mm x 24mm x 25mm



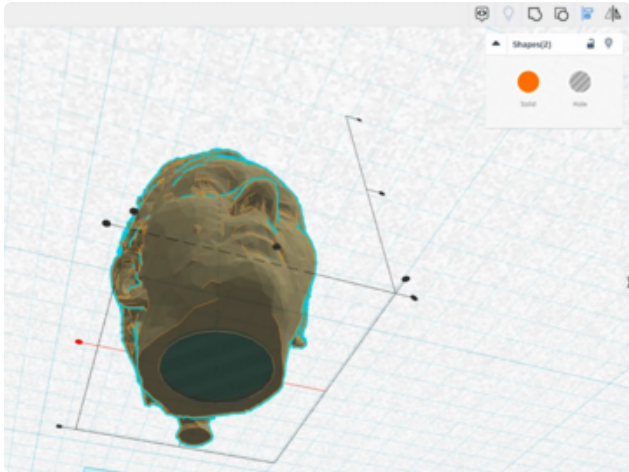
Measure ball joint

Carefully remove the head. Use skate lubricant to help the joint to loosen. Use calipers to measure the size of the ball joint.



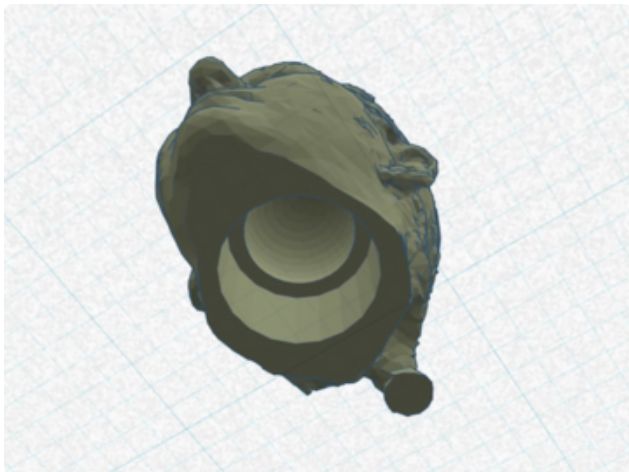
Edit socket size

Adjust the size of the sphere and cylinder to match the size of the ball joint. Ninjabflex filament will need the sphere to be 1mm smaller to press fit the ball socket into the joint.



Align socket

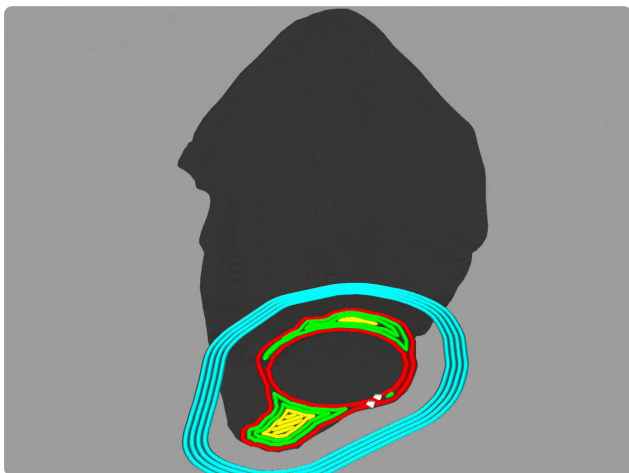
Use the align tool to center the socket geometry to the head.



Combine socket geometry

Shift select the head and socket. Select the combine option to apply the ball socket geometry to the inside of the head.

3D Printing



Parts List

STL files for 3D printing are oriented to print "as-is" on FDM style machines. Parts are designed to 3D print without any support material. Original design source may be downloaded using the link below.

[Edit / Download Ball Socket Joint](#)

<https://adafru.it/10bE>

Slicing Parts



Slice settings for NinjaFlex 85a material.

The parts were sliced using CURA using the slice settings below.

230c extruder
0.3 Initial layer height
.1 layer height
10% gyroid infill
50mm/s print speed
50c heated bed

Slice with setting for PLA material.

The parts were sliced using CURA using the slice settings below.

PLA filament 220c extruder
0.1 layer height
10% gyroid infill
60mm/s print speed
60c heated bed



Paint Selfie



Test paint

Print multiple heads to test matching paint colors and trying multiple version of textures and materials.



Dry brush

Use the dry brush technique to paint the hair.



Paint details

Use a fine point, like a tooth pick or needle, to carefully add the eyes and brows.



Match figure textures

You can also use the dry brush method to match textures that are part of the figure, like the moss on Groot's body.



Complete!



Clean the socket inside the head of any overhang filament. Press fit the head onto the ball joint!

