



AI 3D Printed Figure

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<https://learn.adafruit.com/ai-figure>

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Overview



You can make your own custom figurines using AI generated online tools and multicolor 3D printing.



This project shows how to prompt ChatGPT to generate a toy figure and then use that image to build a multicolored 3D printable model!

The workflow is easy to modify, allowing you to print the perfect mini action figure selfie.



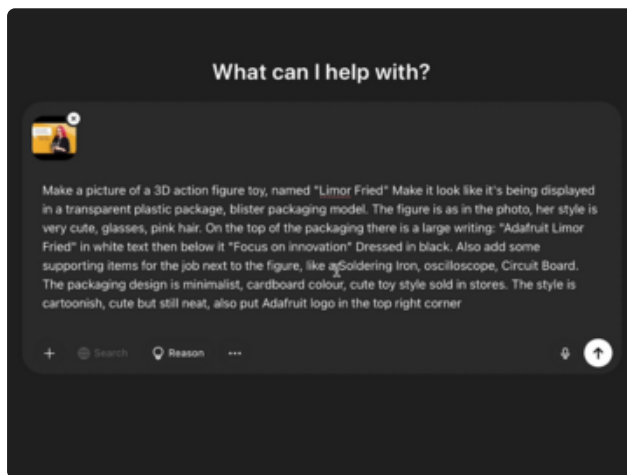
We were able to make a full color figurine of Ladyada featuring her iconic pink hair, black clothing and thick frame glasses.

We also made Phil, aka Mr. Ladyada, to make this project a complete set.

We were able to 3D print our figures using a single photo that we generated with a cute 3D cartoon style.



Generate



Upload reference image

A simple picture of a bust was enough to generate a full body render.

In ChatGPT, upload a reference image of yourself and try the prompt below to build the figure:

```
Make a picture of a plastic 3D action figure toy, named "Your Name" Make it look like it's being displayed in a transparent plastic package, blister packaging model. The figure is as in the photo, her style is very cute, glasses, pink hair. On the top of the packaging there is a large writing: "Name" in white text then below it "Tag line" Dressed in black. Also add some supporting items for the job next to the figure, like a Soldering Iron, oscilloscope, Circuit Board. The packaging design is minimalist, cardboard colour, cute toy style sold in stores. The style is cartoonish, cute but still neat, also put Adafruit logo in the top right corner
```

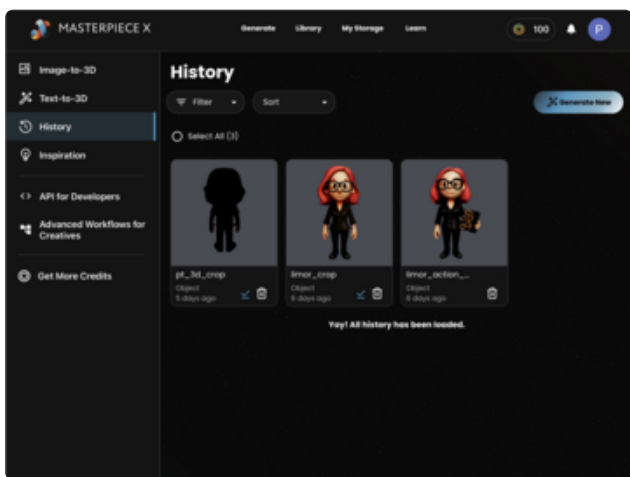


Modify render

Apply any additional edits to the prompt to modify the render.

Make sure all body parts are visible to ensure a printable figure is generated.

The picture listed had difficulty generating the hand connected to the arm. We'll simply add "remove board from hand" to the prompt to help it render the figure.



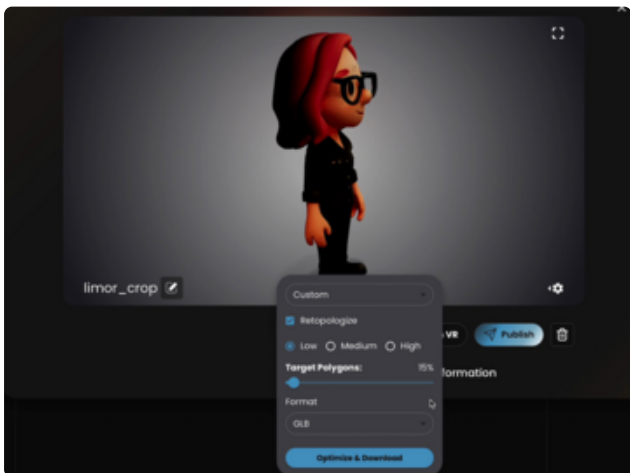
Generate 3D Model

There are a couple of great 3D model generators, for this project we used [masterpiecex.com](https://adafru.it/1ai1) (<https://adafru.it/1ai1>).

Use the **Image-to-3D** option to upload the image from ChatGPT.

Inspect the model by rotating around it to make sure there are no floating disconnected parts to the figure.

Export the retopologized mesh at the high setting. This will make assigning colors to each polygon easier when printing with a multicolor printer.





Fix mesh

Use a mesh editor like Blender to verify the model doesn't have any holes.

Use the sculpting tools to smooth out any jagged vertices.

Lastly check that the normals are all facing outwards so the slicing program can correctly generate a print ready file.

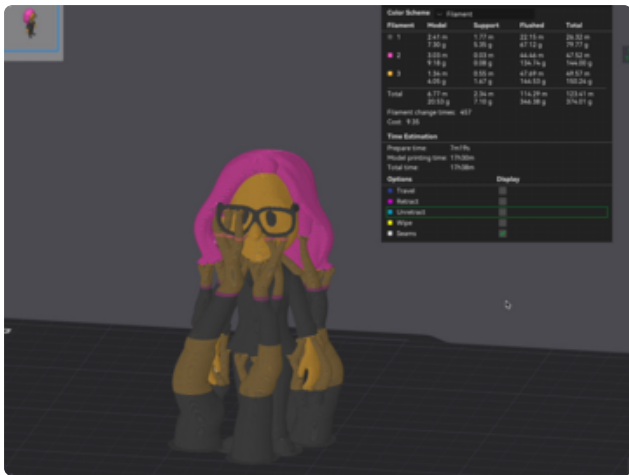
3D Print



Assign colors

Enter the paint environment inside your slicing program to assign colors to each polygon.

In Bambu Studio use the Fill tool and adjust the "**Smart fill angle**" option to modify the range of faces that are affected to color each section of the figure.



Add supports and slice

Enable tree supports to print overhangs and adjust any slicing settings to print the figure.

You can customize slice settings to reduce the amount of waste by lowering the purge amount and the size of the purge tower. This print took roughly 15 to 17 hours to print.

We think this process will only get easier over time, but it's good to know all these tips and techniques for making a successful model that is optimized for 3D printing.



Download PT+Limor Full Color Model STL

<https://adafru.it/1ai2>

