Pourna Sengupta
Corwin Condiotti

Model Link: https://teachablemachine.withgoogle.com/models/tVnqbuMow/

Class Labels: Glass, Mug, Bowl

Reflection: When using this model, there are a few issues that prevent correct identification. The first is picture cropping, which causes cutoff of important identifying features of the object. This can easily be fixed by making sure to crop the pictures to a square beforehand to prevent cropping from uploading. Another problem is the identification of patterned/colorful mugs being incorrectly identified as glasses. A way to fix this issue is to add more sample images to help train the model for a greater variety of mugs. It would also help to add many more sample images with objects that vary in color, shape and size to increase accuracy. Lastly, the glass category only accounts for cups made from glass material. To increase real life accuracy of the model, adding a fourth class for non-glass cups would specify identifying features more.
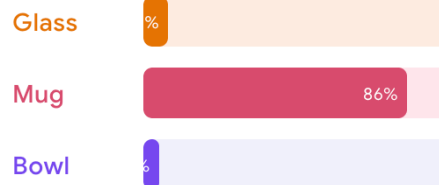
Partner Feedback: This model does a great job at identifying traditional bowls, glasses, and mugs. Issues within the model start to arise when non-traditional glassware items are used. When the model was tested with styrofoam bowls, the model had a hard time identifying whether it was a mug or bowl, only revealing that the item in question was actually a bowl when the inner area of the styrofoam bowl was shown. I think the issue had to do with how most of the mugs used in training were white and thus the model figured that the white outside of the styrofoam bowl was a mug. The model also had a hard time identifying plastic cups, again labeling them as mugs. This made me think that the model may instead simply be labeling unknown objects as mugs, perhaps more training regarding mugs vs non-mug objects would be beneficial. Furthermore, in real world situations such as identifying mugs among glasses, the model failed and identified nearly everything as glasses. I think further testing regarding identifying mugs, cups, and bowls among all glassware may help. Finally, the model was successful in the real world situation of identifying items within a context such as being used by a person or having food stored within them but again, if there were a picture of a dinner table with mugs, glasses, and bowls the model would have a hard time identifying each item.

Review of Partner Model: The model provides accurate identification of the tested objects and does fairly well in sureness of class identification. There is little to no overlap in the identified class for each object meaning the sample image used to train the model included enough variety to account for any atypical objects of a class. A situation where this model may fail is when testing women's fashion. Women's hats and socks are typically different shapes, colors, and sizes than Men's clothing. Another case where the model may fail is older TV's that are not flat screen or HD quality. Lastly, if the images are black and white, will the model still work? This would determine if the model is testing for colors or shapes. It is important that the model is checking the shape of objects rather than color to cover a wider variety of objects within a class.
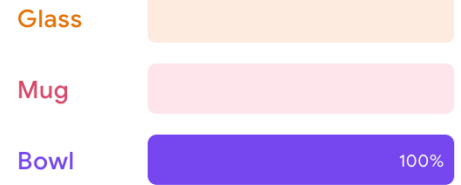
Glass	Mug	Bowl

Glass (top row):

Output

- Glass — 99%
- Mug
- Bowl

Mug (top row):

Output

- Glass — 98%
- Mug
- Bowl

Bowl (top row):

Output

- Glass
- Mug
- Bowl — 99%

Glass (bottom row):

Output

- Glass — 100%
- Mug
- Bowl

Mug (bottom row):

Output

- Glass — 75%
- Mug — 25%
- Bowl

Bowl (bottom row):

Output

- Glass
- Mug
- Bowl — 99%

Output

Glass	%
Mug	86%
Bowl	%

Output

Glass	
Mug	
Bowl	100%

Glass ✎ — 10 Image Samples — Webcam / Upload

Mug ✎ — 10 Image Samples — Webcam / Upload

Bowl ✎ — 10 Image Samples — Webcam / Upload

Training — Model Trained — Advanced

Output

Glass	
Mug	
Bowl	100%