

Project I: Hybrid Images

By Karan Shah

In case you do not have Mathematica to run this notebook, click on the following links to open the interactive sliders in your web browser:

Dog Cat: <https://www.wolframcloud.com/objects/e249c090-8d6f-464f-a8e6-27f9e4ce3b8b>

Bikes: <https://www.wolframcloud.com/objects/611e796e-4627-4ac1-bc0b-3adcd3d3ee1a>



Submarine Fish: <https://www.wolframcloud.com/objects/06efd97c-47d6-493b-9032-7b09fc98d69c>



Marilyn Einstein: <https://www.wolframcloud.com/objects/6b269bf8-394c-48c1-8cf7-c446c01674fe>

Plane Bird: <https://www.wolframcloud.com/objects/6ca262ba-37ce-4ad7-8b87-ba7ce196b03a>


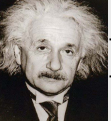
Initializing sample images

In[1]:=

dogcat = {  ,  };

bikes = {  ,  };

submarinefish = {  ,  };

marylineinstein = {  ,  };

planebird = {  ,  };

Function to create hybrid images using the inbuilt blur function to separate frequencies

```
In[13]:= hybridImage[x_]:=Manipulate[ImageAdd[Blur[x[[1]],b],ImageSubtract[x[[2]],Blur[x[[2]],b]]  
(*Variable b here represents the cutoff frequency*)
```

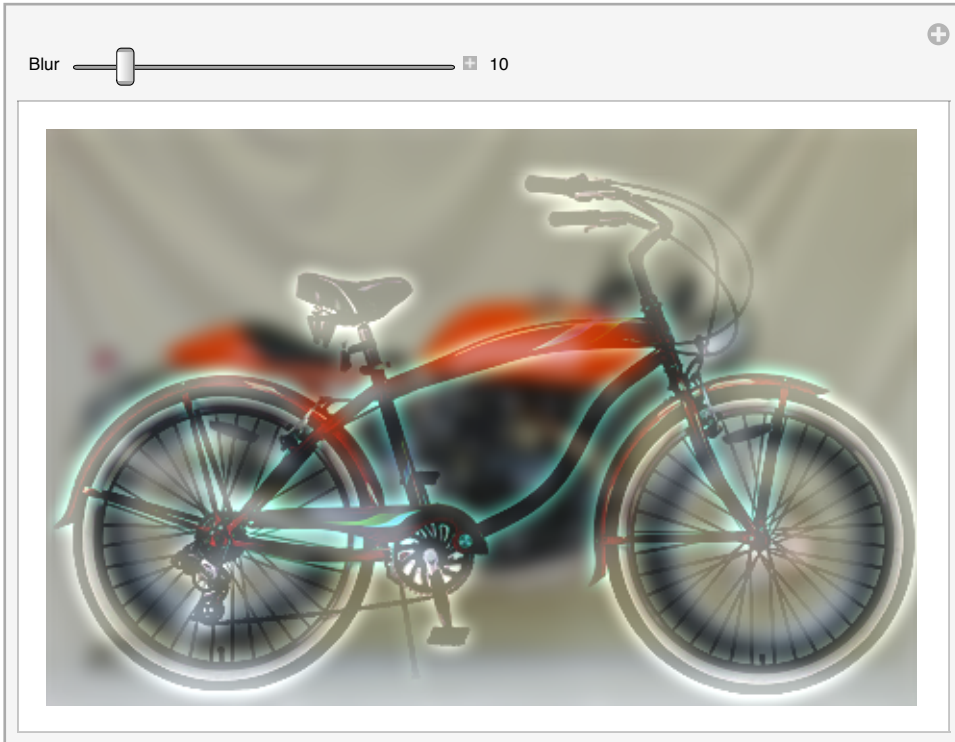
Display all the images with sliders to find the best cutoff frequency parameter

```
In[14]:= hybridImage[dogcat]  
hybridImage[bikes]  
hybridImage[submarinesfish]  
hybridImage[marylineinstein]  
hybridImage[planebird]
```

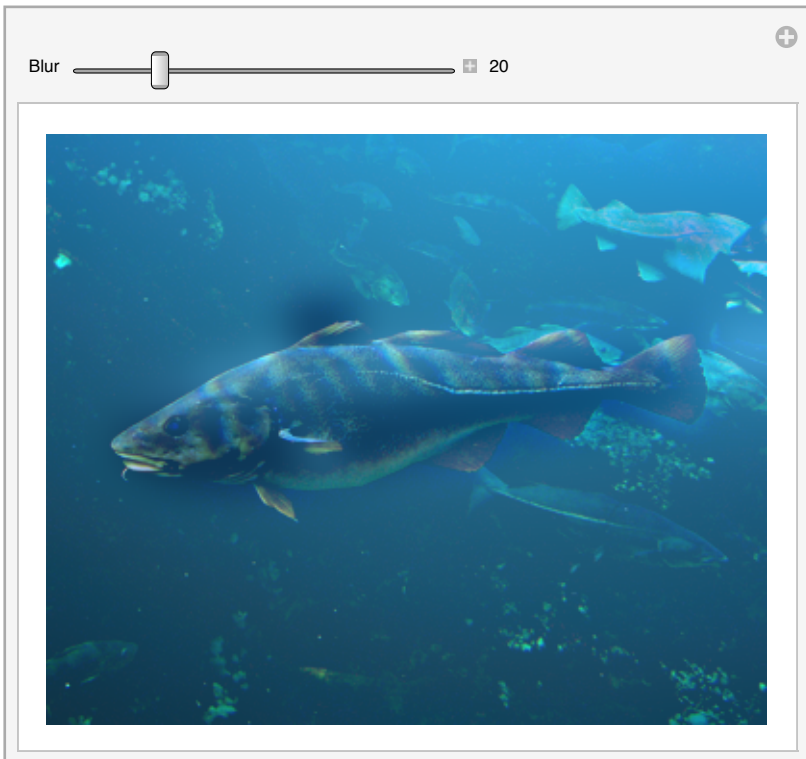
Out[14]=



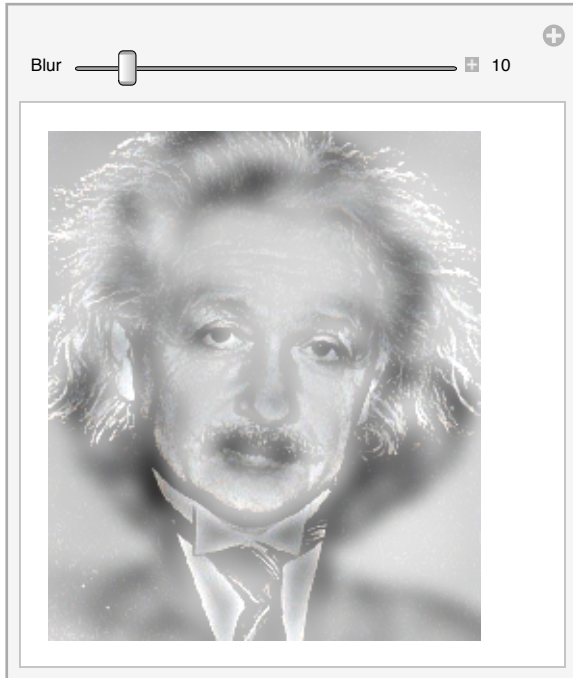
Out[15]=



Out[16]=



Out[17]=



Out[18]=

