**From:** Upadhyay, Neha <nupadhyay9@gatech.edu>  
**Sent:** Saturday, October 14, 2023 2:53 PM  
**To:** Varma, Sashank <varma@gatech.edu>  
**Cc:** Shah, Raj Sanjay <rajsanjayshah@gatech.edu>; Gandhi, Atith N <agandhi98@gatech.edu>  
**Subject:** Re: basing a new HML homework on your numerosity research

**Loading the VGG19 model**

import torch

def load\_model(model\_name):

    if model\_name=="vgg19":

        model = torch.hub.load('pytorch/vision:v0.10.0', 'vgg19', pretrained=True)

    return model

device = 'cuda' if torch.cuda.is\_available() else 'cpu'

model = load\_model("vgg19").to(device)

model.eval()

**Loading the numerosity stimuli**

<Please see the zipped file for Equal Area circles – E5(largest) stimuli. Please note that I shared the entire folders with 20 examples per numerosity>

def load\_data\_from\_folder(N):

    transform = transforms.Compose([            #[1]

    transforms.Resize(256),                    #[2]

    # transforms.CenterCrop(224),                #[3]

    transforms.ToTensor(),                     #[4]

    transforms.Normalize(                      #[5]

    mean=[0.485, 0.456, 0.406],                #[6]

    std=[0.229, 0.224, 0.225]                  #[7]

    )])

    images = []

    labels = []

    for f in glob.iglob('<path of the folder in your google drive>/stimuli/'+str(N)+'/\*'):

        labels.append(os.path.basename(f))

        img = Image.open(f).convert('RGB')

        images.append(np.asarray(transform(img)))

        # print(os.path.basename(f))

    images = np.array(images)

    images = torch.Tensor(images)

    return images, labels

**Getting the activation from final classifier layer**

def get\_activation\_classifier(images):

  activation = {}

  def getActivation(name):

      def hook(model, input, output):

          activation[name] = output.detach()

      return hook

  h = model.classifier[6].register\_forward\_hook(getActivation('linearlayer'))

  out = model(images)

  h.remove()

  return activation['linearlayer']

Let me know if anything else is needed.

Thanks & Regards,

Neha Upadhyay

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