# Monkey Classification

By Amari and Jana

# What is the Problem?

The goal is to have the program classify and identify one of 10 monkey species from an image

# Monkey Species

# Monkey Species



**White-headed Capuchin**

# Monkey Species



**White-headed Capuchin**



**Pygmy Marmoset**



**Patas Monkey**

# Method Used to Resolve it

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Model: ResNet18

Framework: PyTorch

Training:

- Mini-batch gradient descnet

- Loss Function: Cross Entroypy

- Optimizer: SGD (Stochastic Gradient Descent)

# Results!

Testing Database reached 100%

```
Epoch number 4
   - Training Dataset. Got 1079 out of 1097 images correctly (98.359%). Epoch loss: 0.044
   - Testing Datset. Got 1040 out of 1097 images correctly (94.804%)
Epoch number 5
   - Training Dataset. Got 1092 out of 1097 images correctly (99.544%). Epoch loss: 0.023
   - Testing Datset. Got 1096 out of 1097 images correctly (99.909%)
Epoch number 6
   - Training Dataset. Got 1095 out of 1097 images correctly (99.818%). Epoch loss: 0.011
   - Testing Datset. Got 1097 out of 1097 images correctly (100.000%)
Epoch number 7
   - Training Dataset. Got 1093 out of 1097 images correctly (99.635%). Epoch loss: 0.013
   - Testing Datset. Got 1093 out of 1097 images correctly (99.635%)
Epoch number 8
   - Training Dataset. Got 1093 out of 1097 images correctly (99.635%). Epoch loss: 0.014
   - Testing Datset. Got 1097 out of 1097 images correctly (100.000%)
Epoch number 9
...
Epoch number 20
   - Training Dataset. Got 1096 out of 1097 images correctly (99.909%). Epoch loss: 0.008
   - Testing Datset. Got 1096 out of 1097 images correctly (99.909%)
```

# Results!

Able to successfully identify and classify the image

```
    image_path ='./validation/validation/n1/n120.jpg'
    classify(model, image_transforms, image_path, classes)
4]

Patas Monkey
```

Generate

# Thanks!