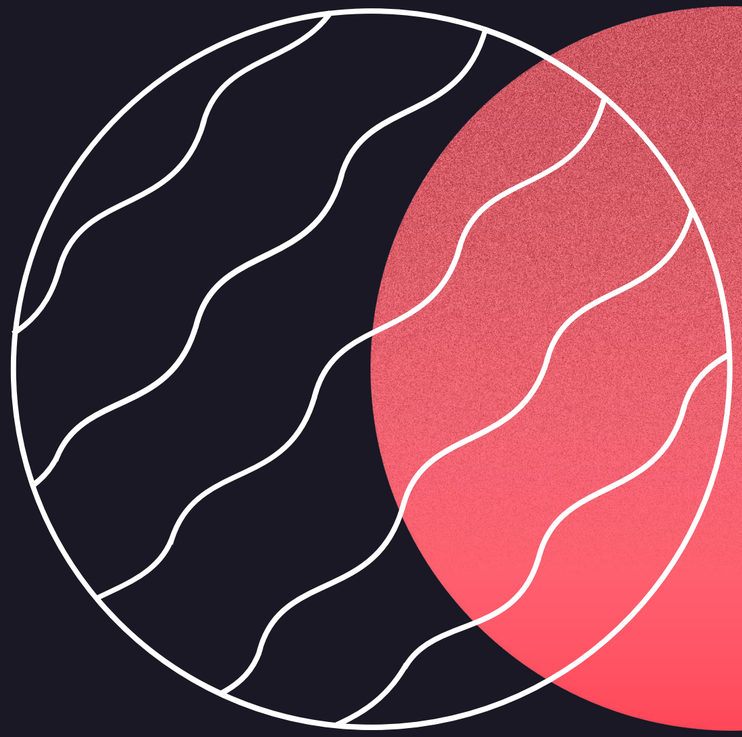


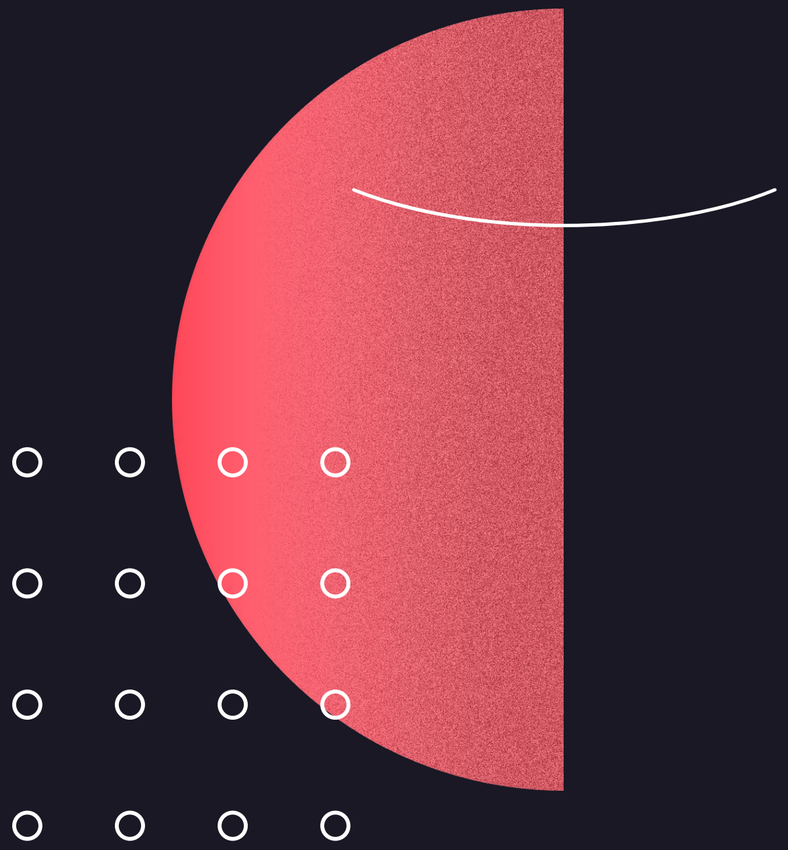
Image Classifier Using Neural Network

Ali Aljamid

What is This Project Trying to Solve?

- Classify images based on the category

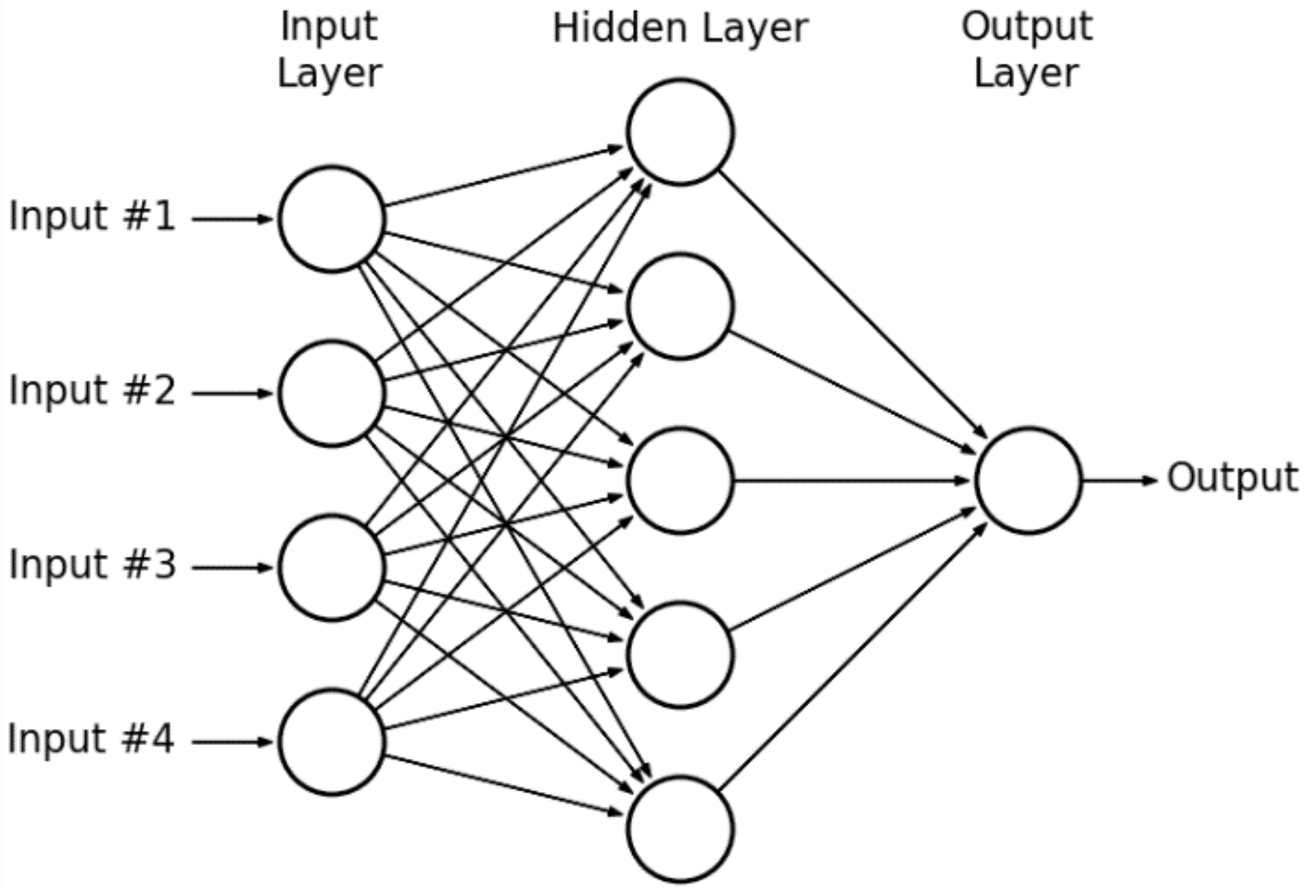
What are the classes that will be used?



- Dogs
- Cats
- Horses
- Frogs
- Deers
- Ships
- Trucks
- Cars
- Planes
- Birds

NEURAL NETWORK MODEL THAT WILL BE BUILT

Multilayer Perceptron



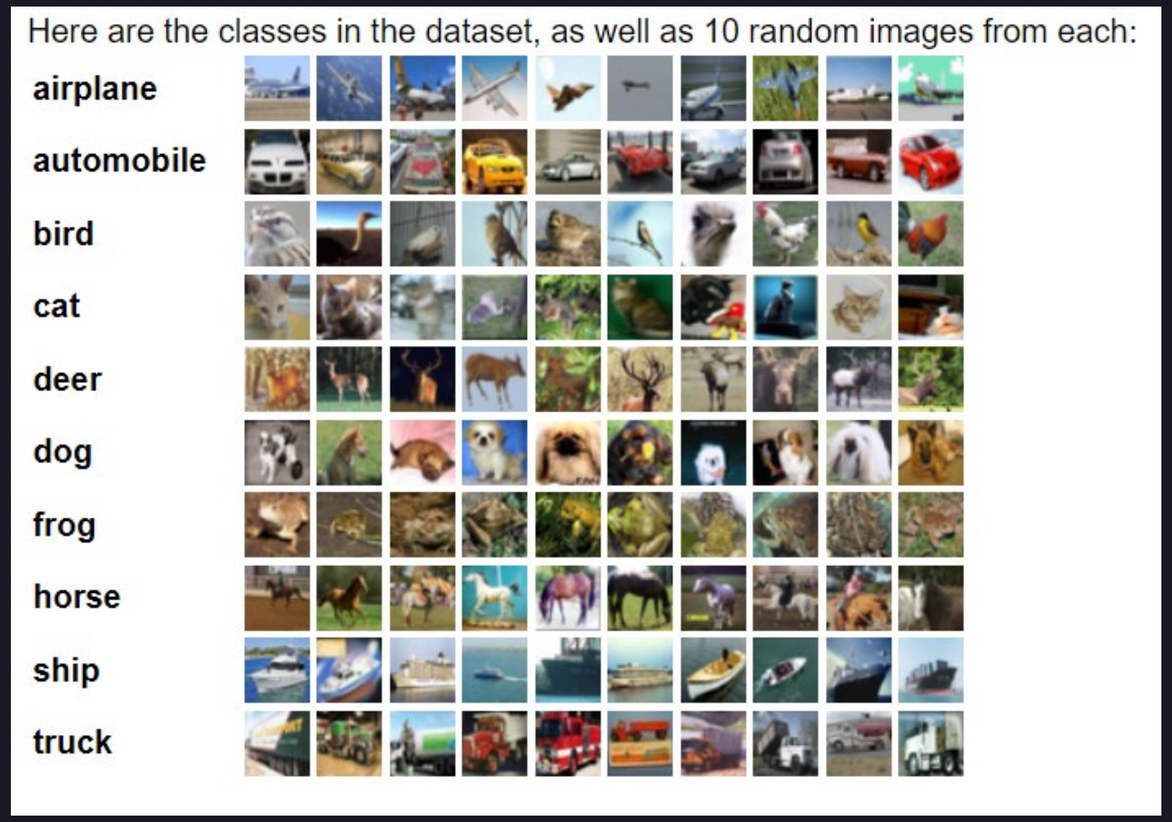
MAIN TOOLS

DATASET

The CIFAR-10 dataset

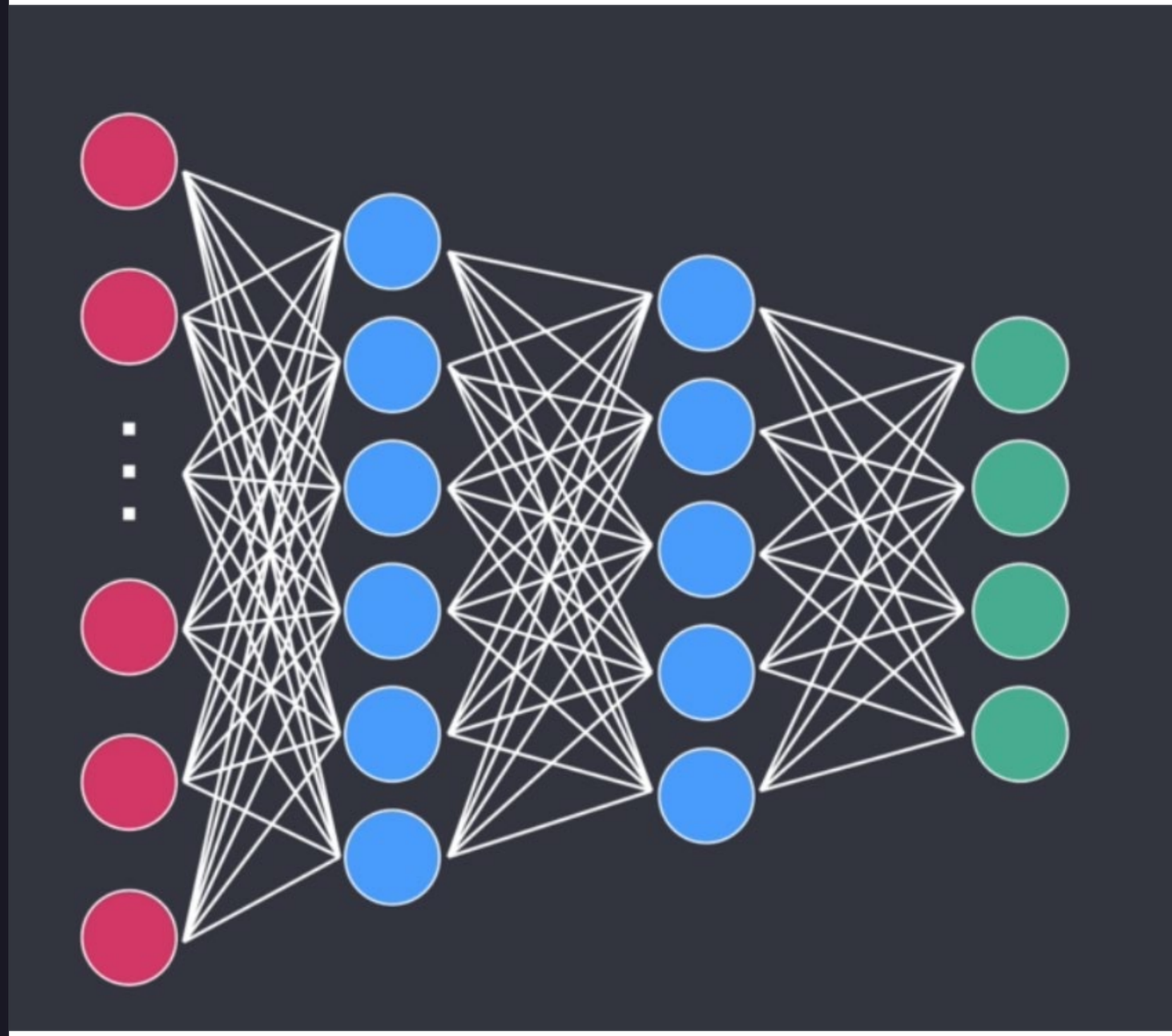
www.cs.toronto.edu/~kriz/cifar.html

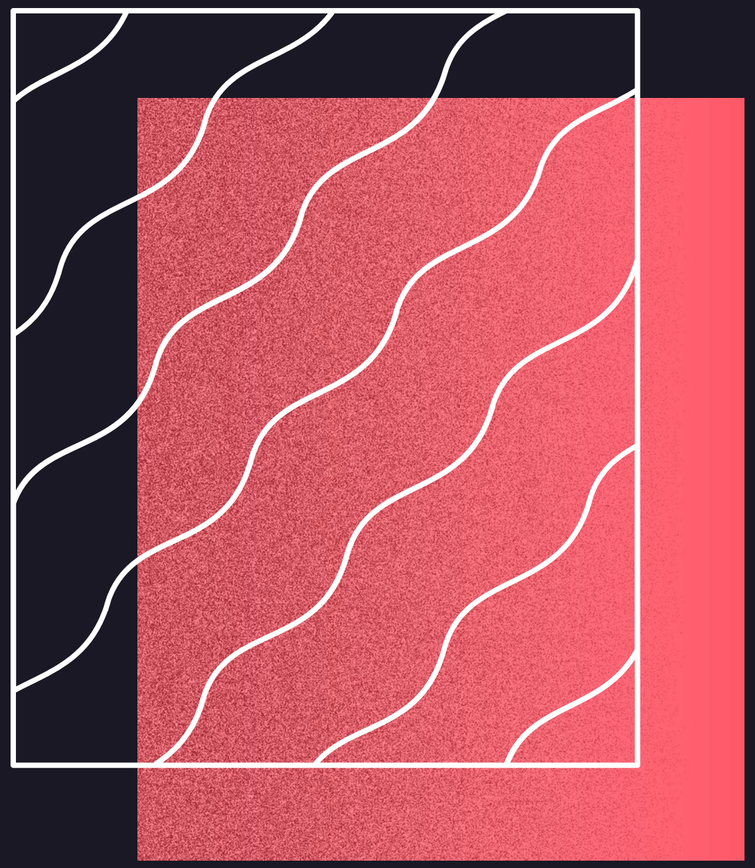
Dataset size: 60k images



MULTILAYER PERCEPTRON

- Hidden layers: Rectified Linear Unit (ReLU)
- Outpot layer: Softmax





EVALUATION AND ANALYSIS

- The amount of data makes a huge difference in the accuracy
- Early stopping & dropout are helpful to prevent overfitting
- Accuracy: 30.8%

```
Actual value: 6 vs. predicted: 6
Actual value: 9 vs. predicted: 1
Actual value: 9 vs. predicted: 9
Actual value: 4 vs. predicted: 5
Actual value: 1 vs. predicted: 9
Actual value: 1 vs. predicted: 1
Actual value: 2 vs. predicted: 2
Actual value: 7 vs. predicted: 4
Actual value: 8 vs. predicted: 0
Actual value: 3 vs. predicted: 9
```