Object Classification of Tiny Images

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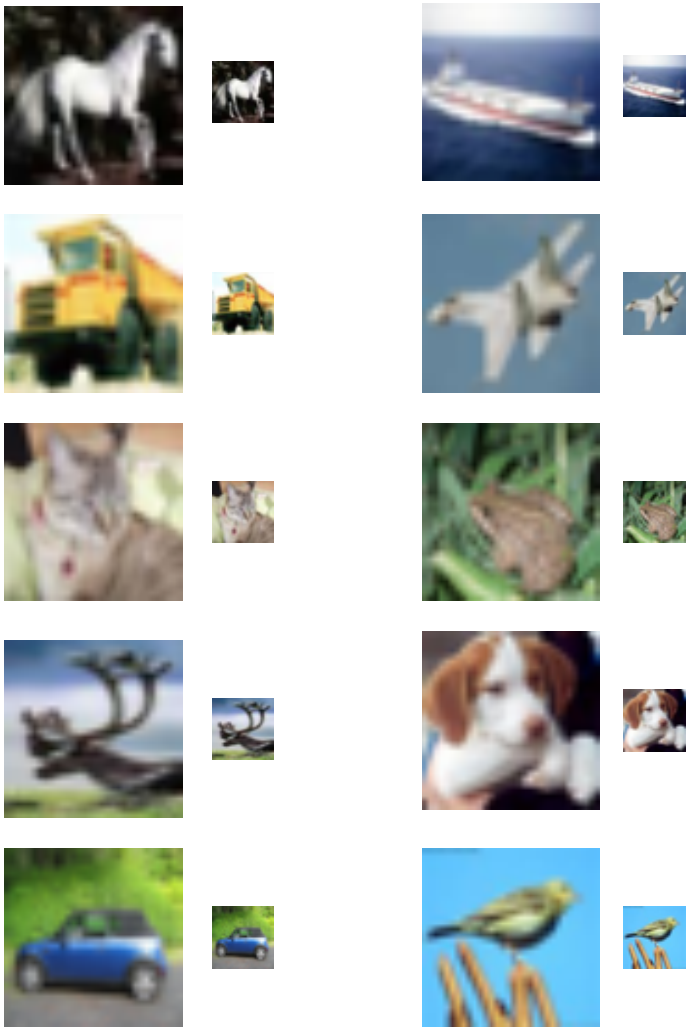
The Dataset

- CIFAR-10

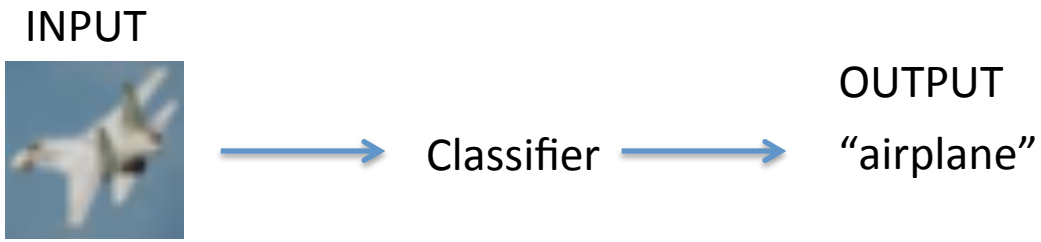
Learning Multiple Layers of Features from Tiny Images. Alex Krizhevsky, April 8 2009.
www.cs.toronto.edu/~kriz/learning-features-2009-TR.pdf

- 60000 tiny color images
  - Tiny = 32 by 32 pixels
    - On an average screen ½ inch square!
  - All hand-labeled
  - Contain a single dominant object
  - Images of 10 objects:
    - horse, ship, truck, airplane, cat,
    - frog, deer, dog, automobile, bird



Aims

- Use machine learning techniques to build an automated image recognition system



- Learn some familiarity with Python image processing tools
- Experience the challenges of working with images

A Ten Class Classifier

Cat	Bird	Truck	Horse	Dog	Frog	Ship	Deer	Airplane	Automobile
0.03	0.00	0.00	0.00	0.06	0.01	0.01	0.13	0.03	0.73

10 Class
54% accuracy

A Two Class Classifier

Animal
- frog
- dog
- cat
- horse
- deer

0.25

2 Class
84% accuracy

Mechanical
- truck
- automobile
- airplane
- ship

0.75