

⇒ Set up CUDA for NVidia GPUs. :-

✓ (i) You must have NVidia GPU.  
that should support CUDA

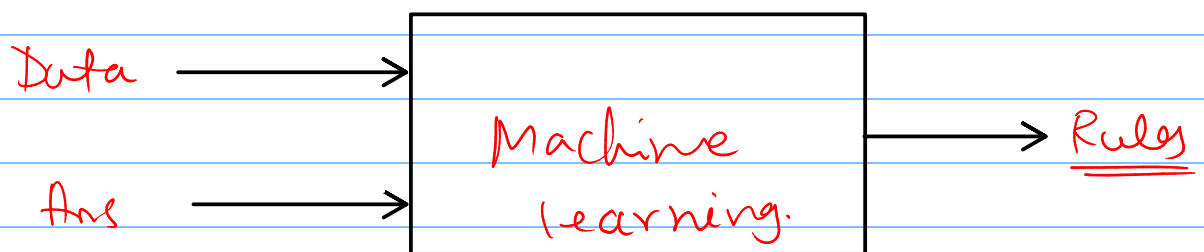
{ (i) Latest NVidia Drivers. → 500MB  
(ii) NVidia CUDA toolkit - 2.9GB  
(iv) CUDNN → 2.3GB

Google Colaboratory))

⇒ Classifying hand written digits.

0, 1, 2, 3, 4, 5, 6, 7, 8, 9

(i)



MNIST ⇒ handwritten digits.  
keras

(i) Optimizer.  $\rightarrow$  SGD | Stochastic Gradient Descent.

(ii) loss  $\Rightarrow$

(iii) metric

binary.

Categorical - crossentropy.

$\Rightarrow$

Classification

2-class

binary

Multi class

problem.

Cat Dog Goat

0

1

2

3

...

...

9

activation function  $\Rightarrow$  ReLU  $\rightarrow$  Rectified linear Unit.

$\hookrightarrow$  Softmax.

$\Rightarrow$

Cat

Dog

Goat

0.1

0.2

0.7

$$P = \sum n_i = 1$$

labels  $\rightarrow$  Categorical.

$\Rightarrow$ Dog		Cat	Dog	Goat
Data ✓	1	0	1	0
	2			
	3			
	:			
<u>Ans</u>				