Convolution NN - Keras

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Here I will show an example about how to carry out convolution neural networking in Keras package in R.

Data Operation

Like our last file, we still need to read the minst data and split it into training and testing sets.

```
mnist <- dataset_mnist()
c(c(x_train, y_train), c(x_test, y_test)) %<-% mnist
```

So what does our data look like? First, we have a rough plot of this picture. Noticing that the dimension of the training data is 60000 by 28 by 28. It's obvious that 28 by 28 is a picture, and 60000 is the number of observations in the training data set.

```
dim(x_train)
```

```
## [1] 60000    28    28
```

```
index_image = 1000 ## change this index to see different image. For now, we see the 1000th picture
input_matrix <- x_train[index_image,1:28,1:28]
output_matrix <- apply(input_matrix, 2, rev)
output_matrix <- t(output_matrix)
image(1:28, 1:28, output_matrix, col=gray.colors(256), xlab=paste('Image for digit of: ', y_train[index_
```
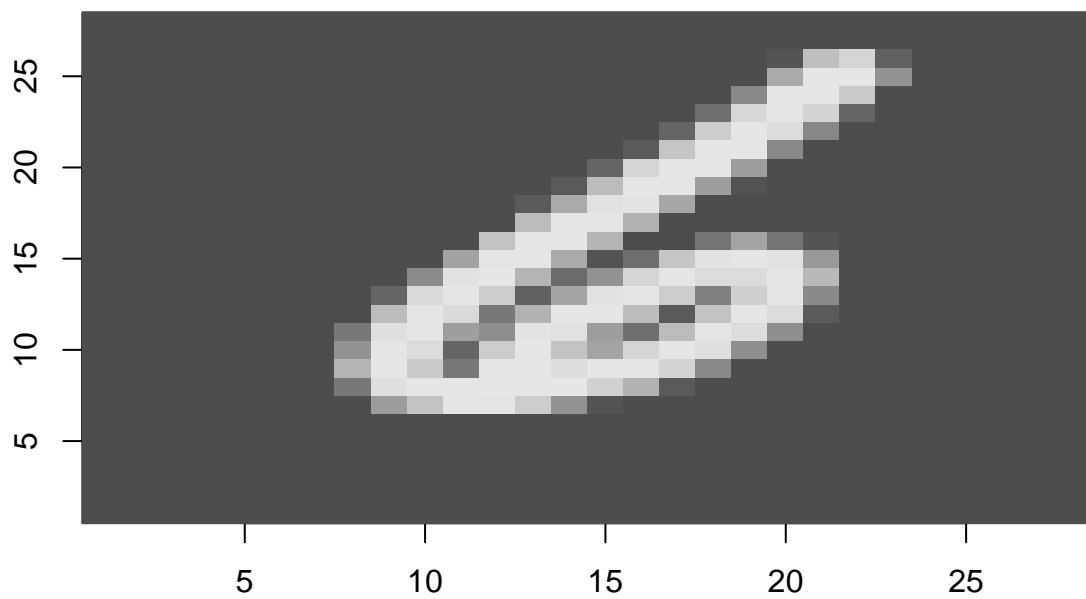
Image for digit of: 6