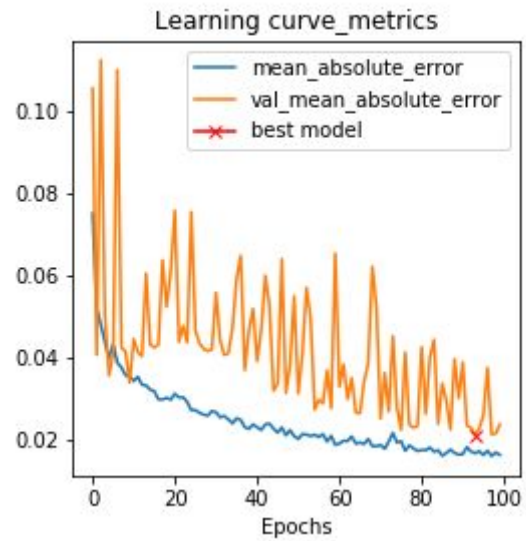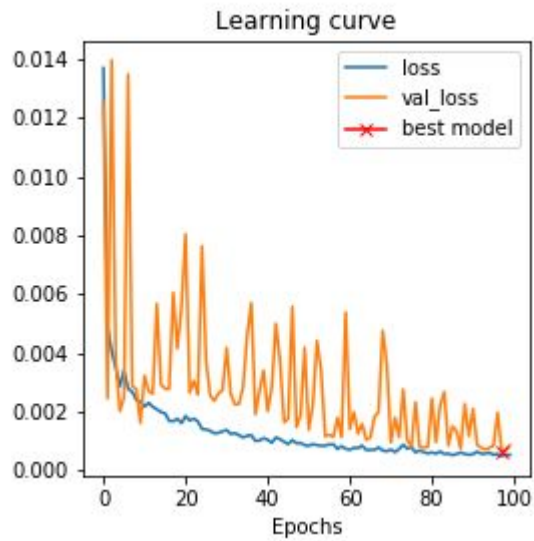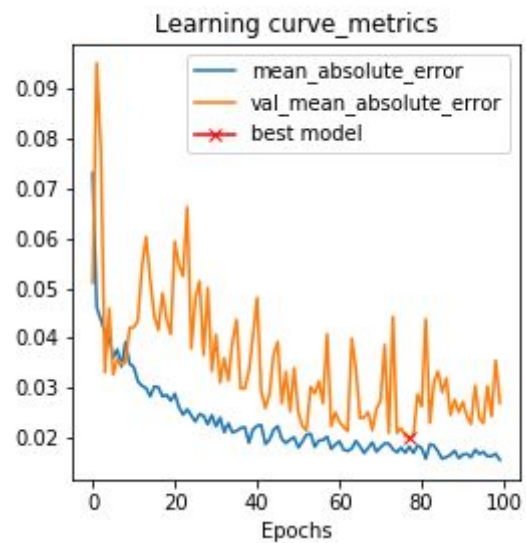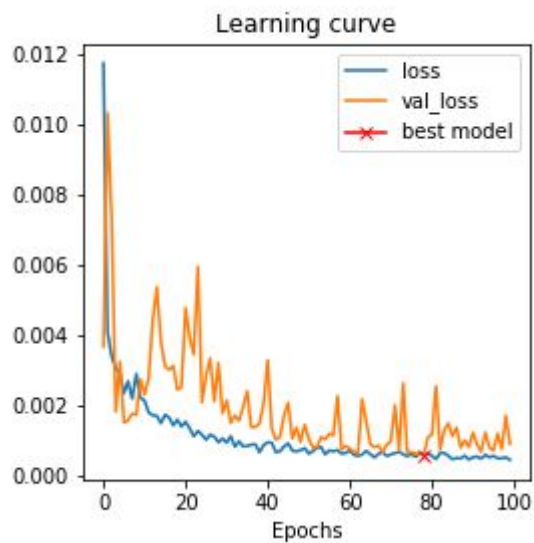**Task 1**
unit = 20:

Epoch: 98
Lowest Loss: 0.000642971193883568
        Error: 0.0212
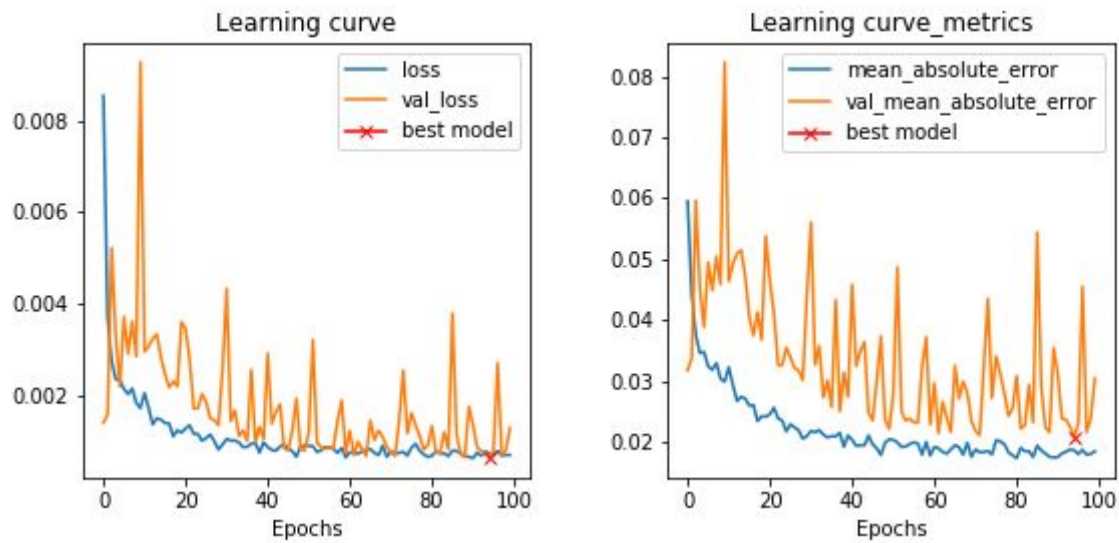
unit = 40:

Epoch: 79
Lowest Loss: 0.0006171849672682583
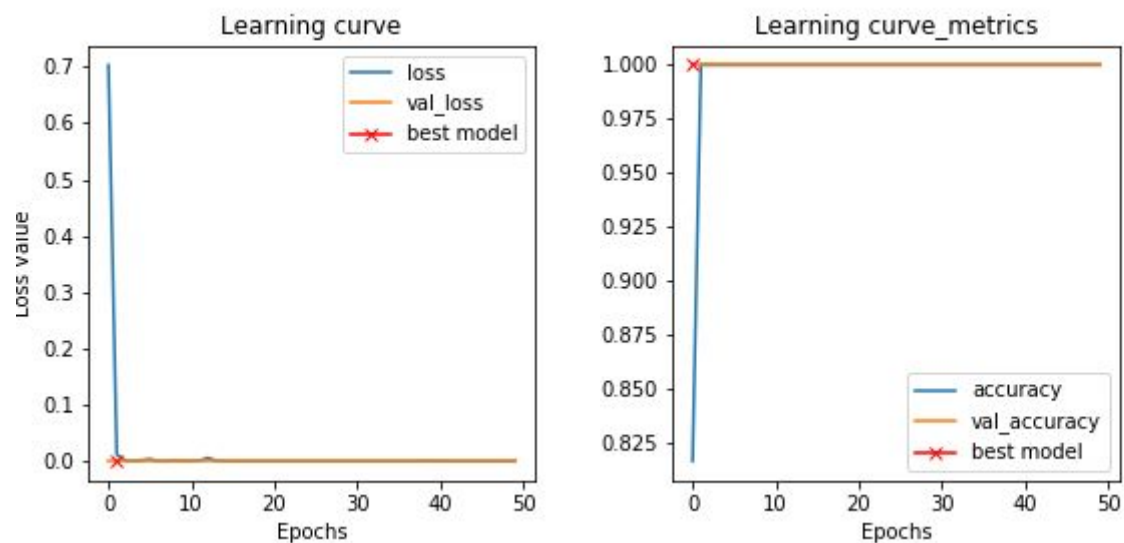   Error: 0.0204

unit = 60:

Epoch: 95
Lowest Loss: 0.000632237468380481
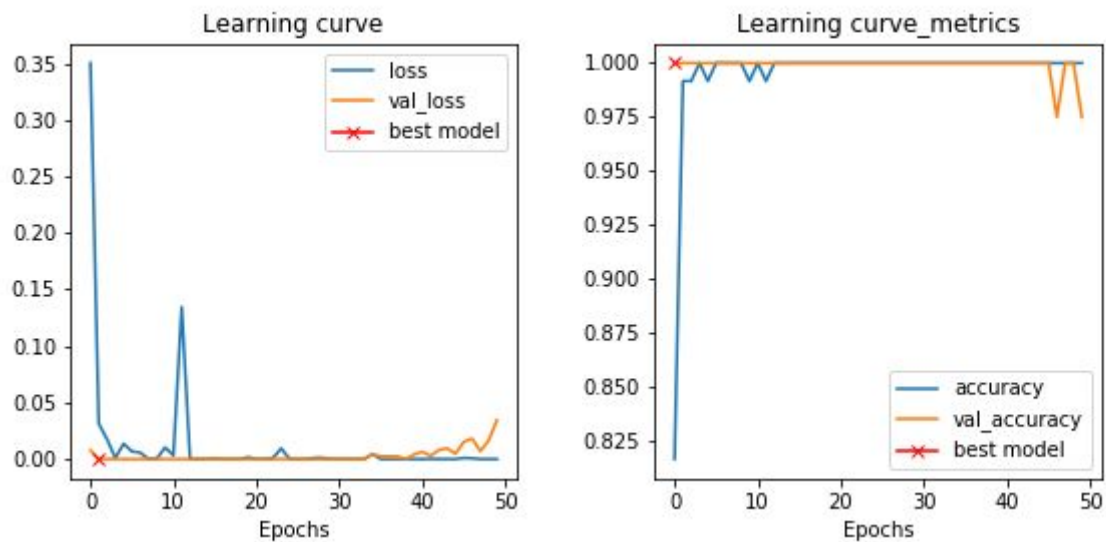   error: 0.0208

Comment:
I set number of output units as 20, 40 and 60. The model performs better when I increase the number of output units from 20. But 40 units is the best one among these three settings.
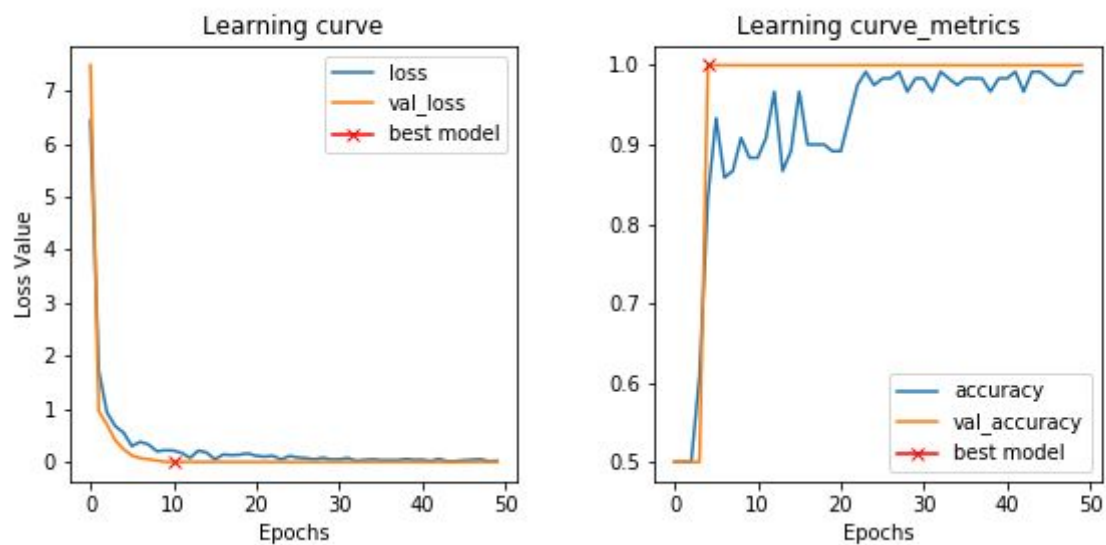
Task 2
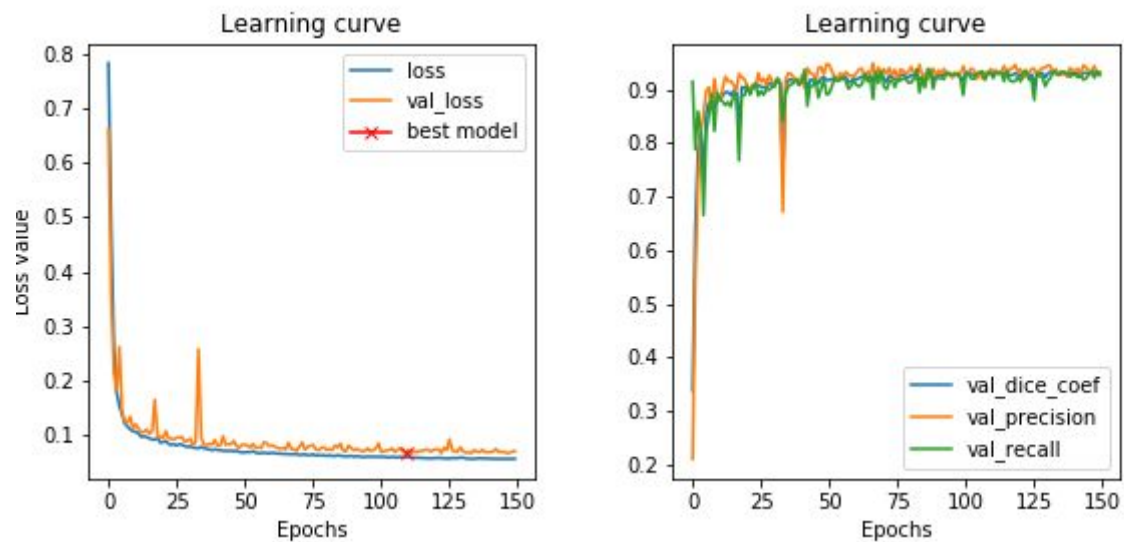**unit = 10:**

units = 5:

units = 2:

Comment:

Normally, just for this task, we can get 100 % accuracy on the validation set after the 1st or 2nd epoch every single time when the units is 10 or 5. Because distinguishing left and right should be easy to achieve for this model. And when we reduce the units to 2, the learning curve of loss is better.

Task 3

W applied the data augmentation to the train data before we trained it. And the parameter setting we use is Base=16, activation='relu', drop=0, batchnorm=True, optimizer=Adam, learning rate=0.0001, loss='dice_coef_loss', metrics=[dice_coef,recall,precision].

We ran it for 150 epochs. From the results we can see that the value of validation dice coefficient, precision and recall are all around 0.91, which means the model performs quiet well on this task.