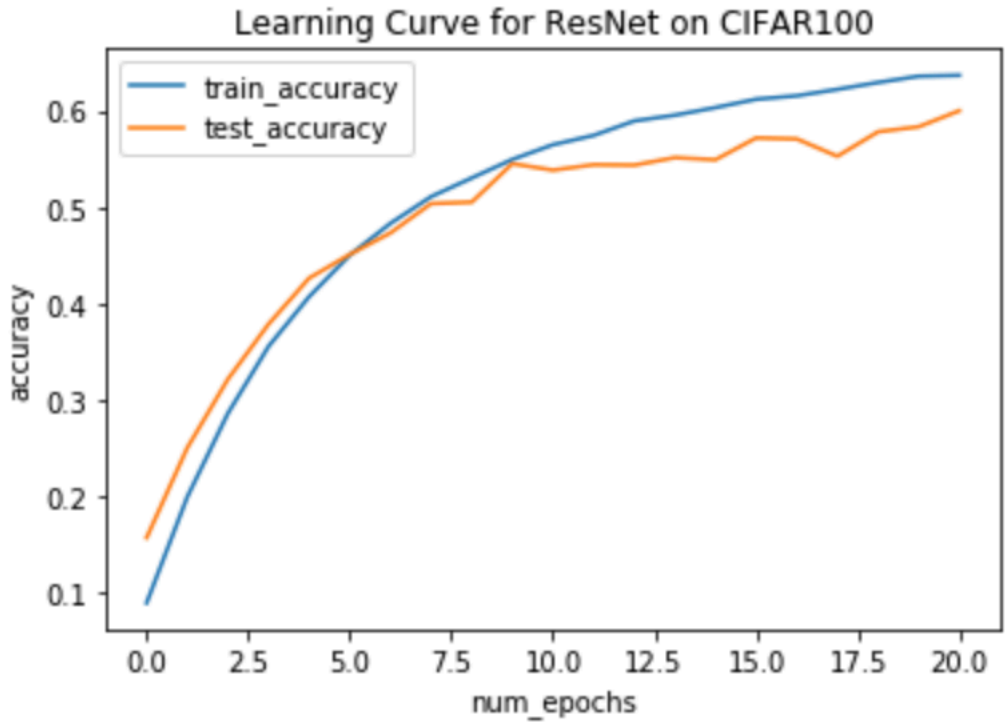
CS547
HW4
Tianqi Wu

ResNet CIFAR100

The accuracy on the test set is **0.6001** after 20 epochs of training with batch_size of 128. The dropout rate is set as 0.2. The optimizer used is Adam with constant learning rate of 0.001 and weight decay of 0.001. Data augmentation includes RandomCrop( ) , ToTensor( ),Normalize( ) and RandomHorizontalFlip( ).

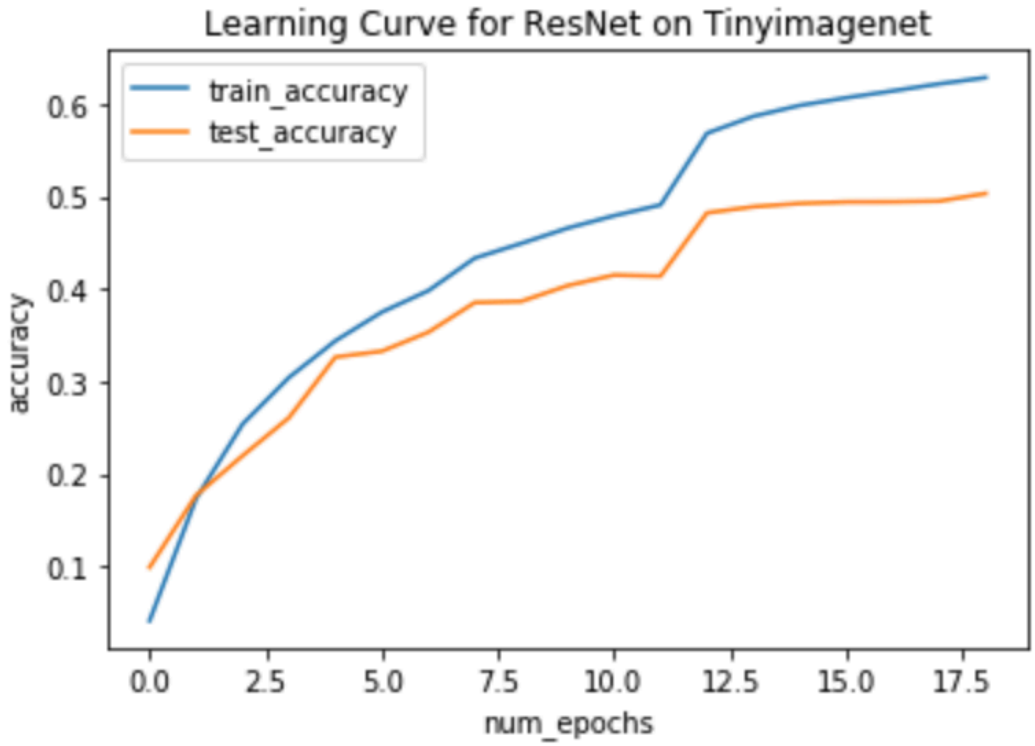
The model has the structure provided on the lecture slide. The total running time is 1764 seconds on Google Colab.



ResNet Tinyimagenet

The accuracy on the test set is **0.5029** after 18 epochs of training with batch_size of 256. The dropout rate is set as 0.2. The optimizer used is Adam with learning rate of 0.001 and weight decay of 0.001. Learning schedule uses ReduceLROnPlateau(optimizer, mode='max', factor=0.2, patience=0, verbose=True, min_lr=0.0001). Data augmentation includes RandomCrop( ) , ToTensor( ), and RandomHorizontalFlip( ).

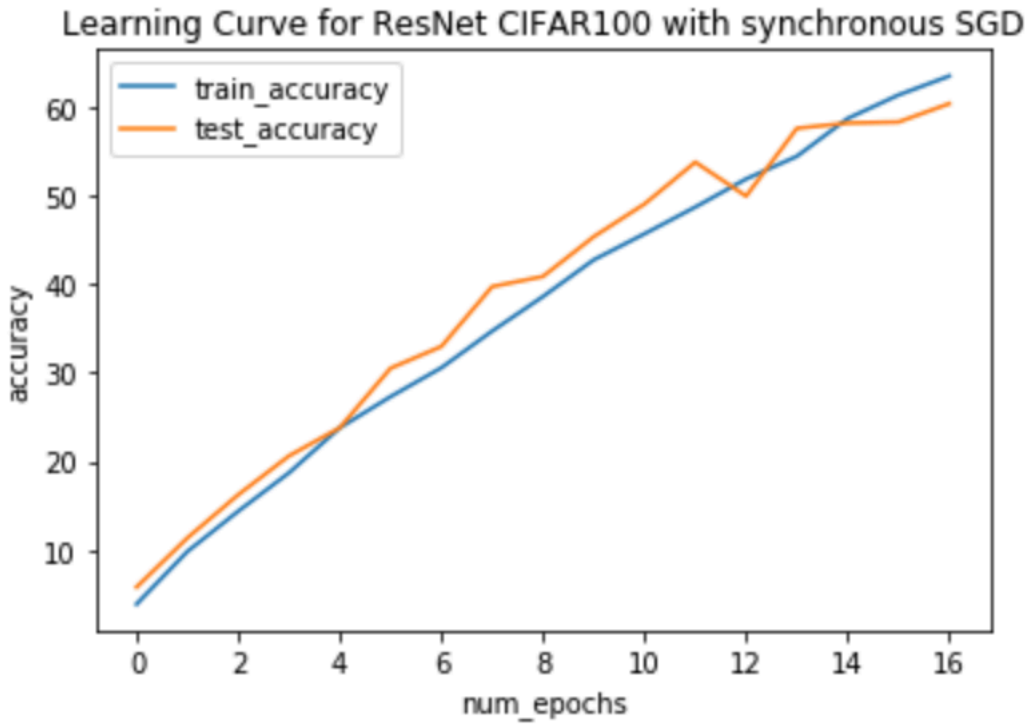
The model has the structure provided on the lecture slide. The total running time is 12474 seconds on Blue Water.



ResNet CIFAR100 with synchronous SGD

The accuracy on the test set is **60.36%** after 16 epochs of training with batch_size of 128. The dropout rate is set as 0.2. The optimizer used is Adam with constant learning rate of 0.001 and weight decay of 0.001. Data augmentation includes RandomCrop( ) , ToTensor( ),Normalize( ) and RandomHorizontalFlip( ).

The model has the structure provided on the lecture slide. The total running time is 721 seconds on Blue Water.



Pre-trained ResNet CIFAR100

The accuracy on the test set is **0.7351** after 8 epochs of training with batch_size of 128. The dropout rate is set as 0.2. The optimizer used is Adam with learning rate of 0.001 and weight decay of 0.001. Learning schedule uses ReduceLROnPlateau(optimizer, mode='max', factor=0.2, patience=1, verbose=True, min_lr=0.0001). Data augmentation includes RandomCrop( ) , transforms.Resize((224,224)), ToTensor( ),Normalize( ) and RandomHorizontalFlip( ).

The total running time is 2845 seconds on Google Colab.