

MTH3033 HW5 (Fall 2022)

Professor Youngjoon Hong

Due Date: November. 15 (11:59 pm)

Write a python code for Problem 1. For credits, submit your fully working code to my TA at dltmdgus520@g.skku.edu. The title of your email should contain student number, your name, course number; e.g., “2022160301 Heung-min Son MTH3033HW5”.

Problem 1 *Using the Pytorch, write a code to predict the final test score with the multivariable linear regression. The test-score.csv contains results of the first three exams (column 1,2,3) and the true data (column 4). Using the scores of the first three tests, you will make a multivariable linear regression to predict the final test score. For this, you have to load the datafile: test-score.csv. Referring to the template below, you can complete the code.*

```
W = torch.zeros((3, 1), requires_grad=True)
b = torch.zeros(1, requires_grad=True)
# Set up the optimizer
optimizer = optim.SGD([W, b], lr=1e-5)

nb_epochs = 2000
for epoch in range(nb_epochs + 1):

    # Compute H(x)
    prediction = model(x_train)

    # Compute the cost with MSE
    cost = F.mse_loss(prediction, y_train)

    # Update H(x)
    optimizer.zero_grad()
    cost.backward()
    optimizer.step()

    # print epoch and cost for every 20 epochs
```

```
if epoch % 100 == 0:  
    print(...)
```

To check your code, you have to put the following test in your answer after training your model.

```
# Put the test input  
new_var = torch.FloatTensor([[73, 80, 75]])  
# Get the prediction value.  
pred_y = model(new_var)  
print(pred_y)
```