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1) Test accuracy: 65.80%

2a) length of time series = 3; number of dimensions of each element of that time series = 100

2b) length of time series = 10; number of dimensions of each element of that time series = 100

2c) For model1:

SimpleRNN = input weights (100x3) + recurrent weights (3x3) + bias (3) = 312

Dense = weights (3x1) + bias (1) = 4

Total = 312 + 4 = 316

For model2:

SimpleRNN = input weights (100x3) + recurrent weights (3x3) + bias (3) = 312

Dense = weights (3x1) + bias (1) = 4

Total = 312 + 4 = 316

Therefore, the number of trainable weights in model1 is equal to the trainable weights in model2.

2d) For model1:

Total = 312 + 4 = 316

For model3:

SimpleRNN = 312

Bidirectional = 312 (forward) + 312 (backwards) = 624

Dense = (6x1) + 1 = 7

Total = 631

Therefore, the number of trainable weights in model1 is less than the trainable weights in model3.