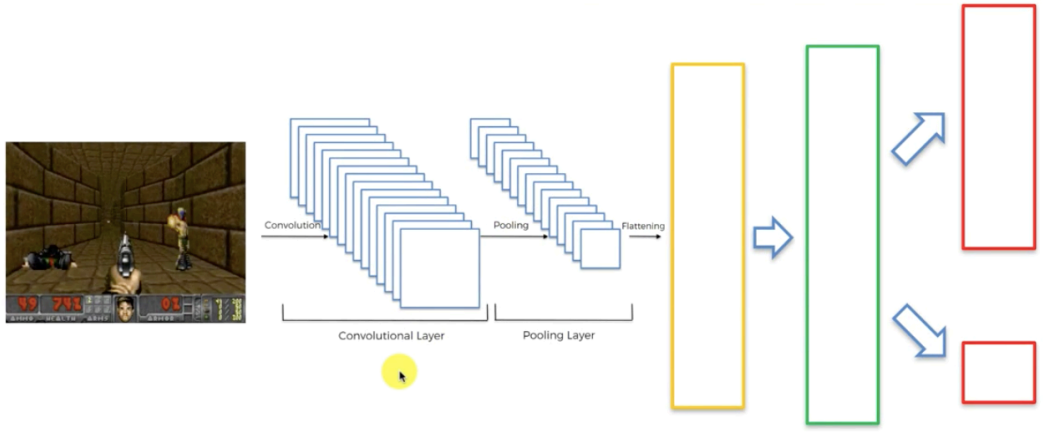
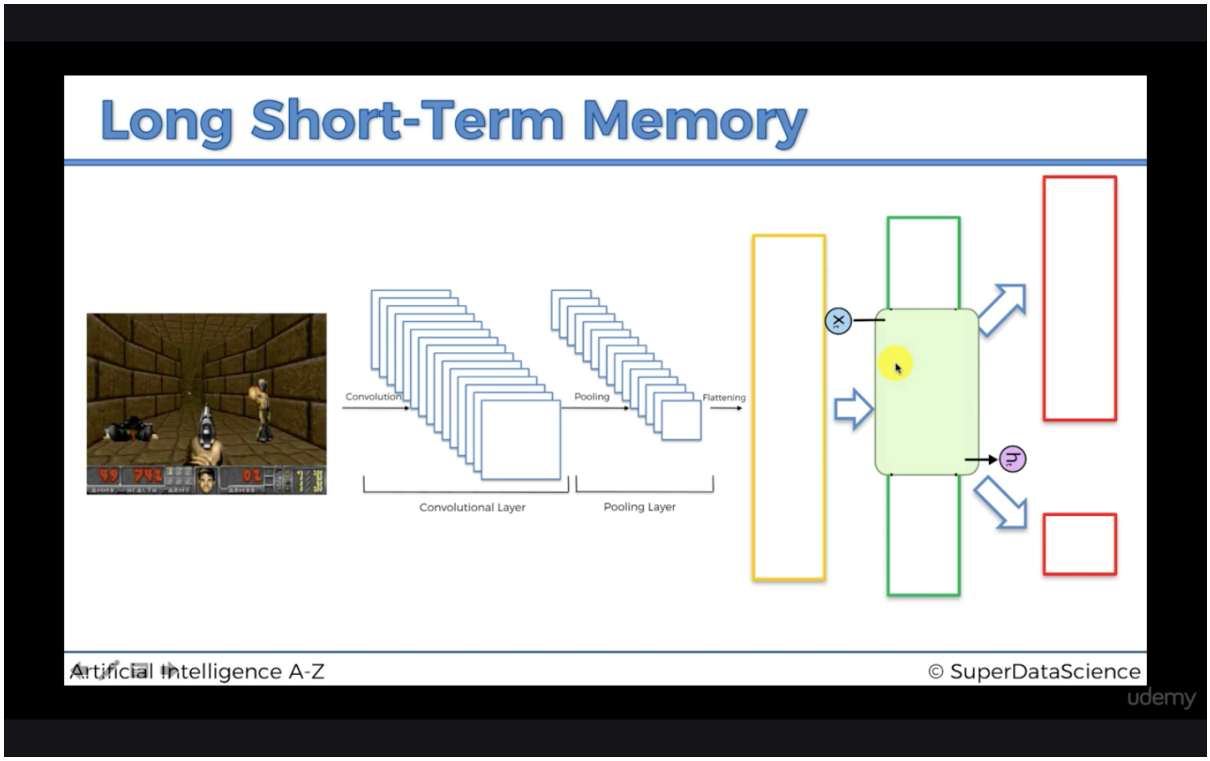
Long Short-Term Memory (LSTM)

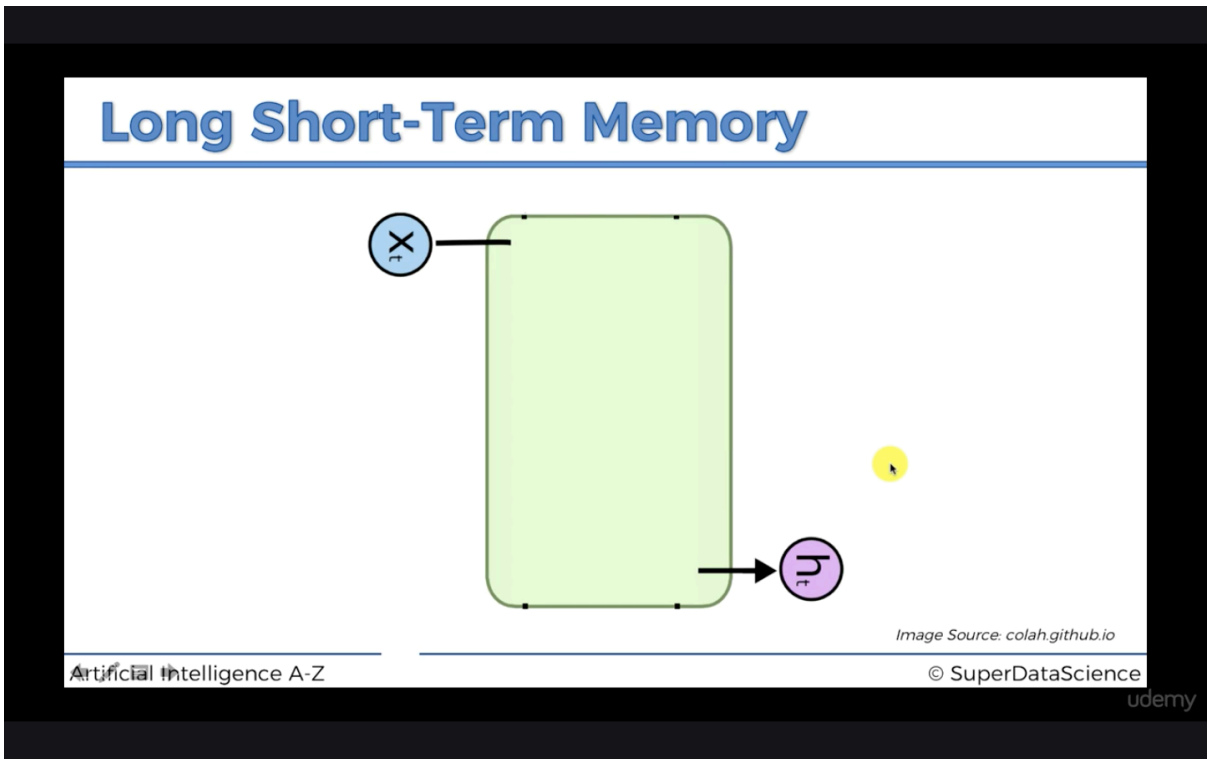
Long Short-Term Memory

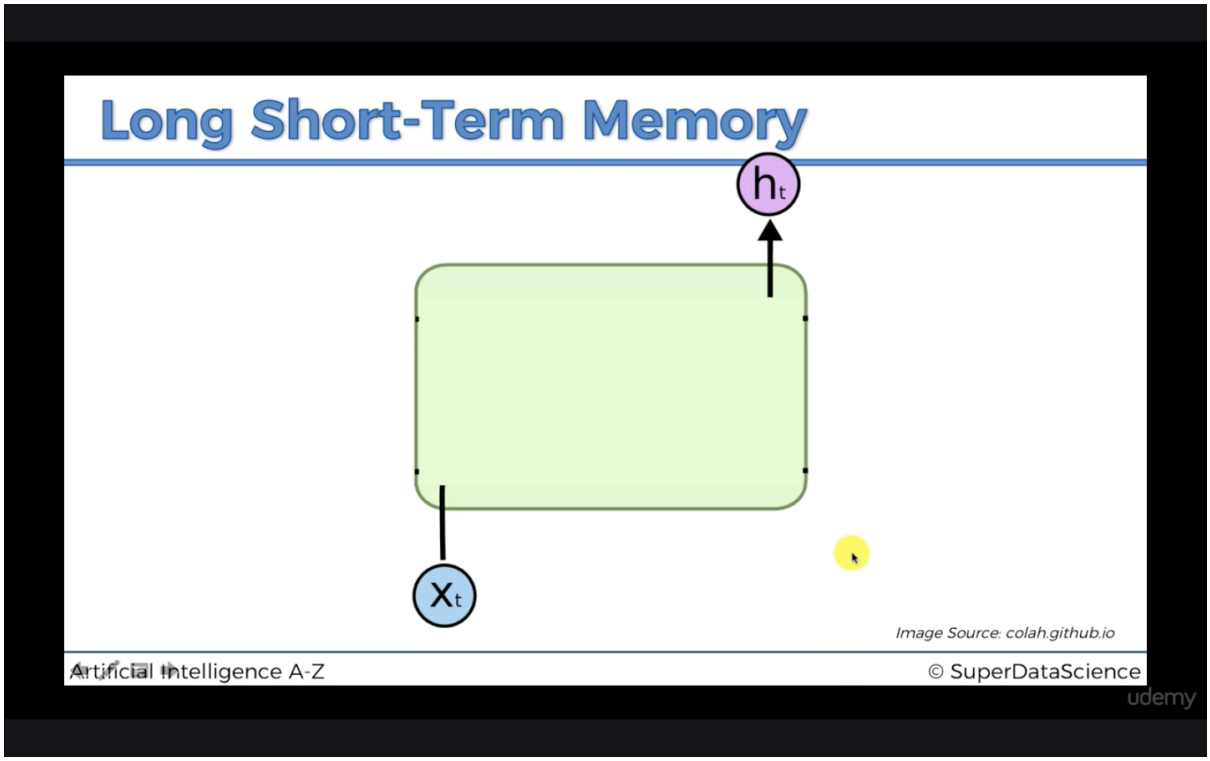




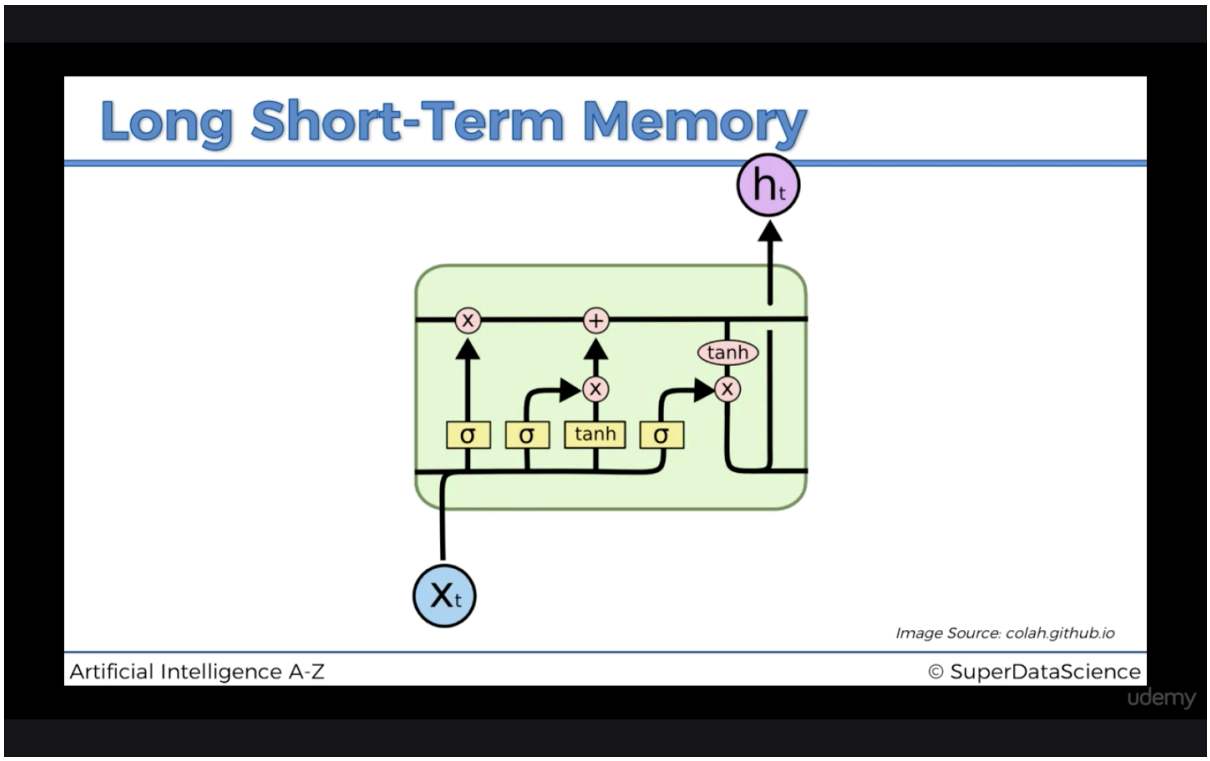
In the practical part of the code. We used the LSTM instead of hidden layers. Because of its strength, it works pretty well. Of course, it is possible to add extra hidden layers as well which you can experiment upon it.

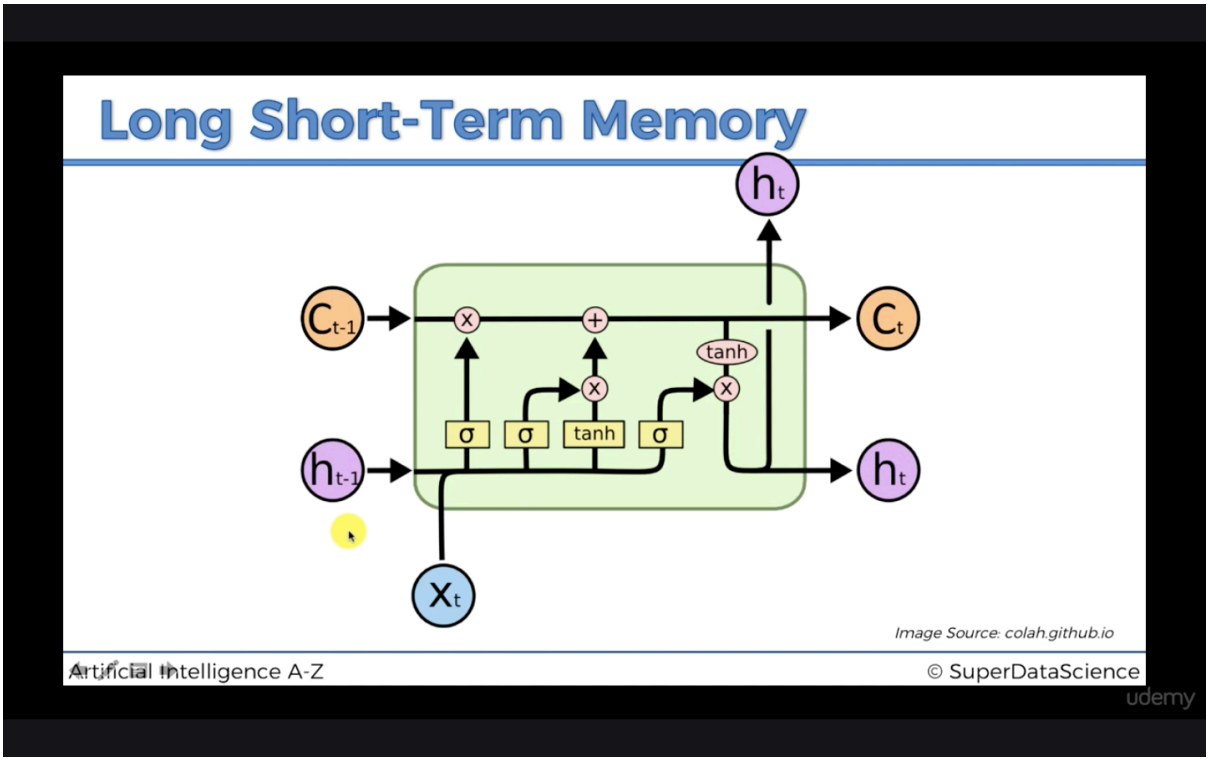
This is a shape of the LSTM which output of first layer that is the vector values x goes to the X_t and as an output we get another vector which is h_t.



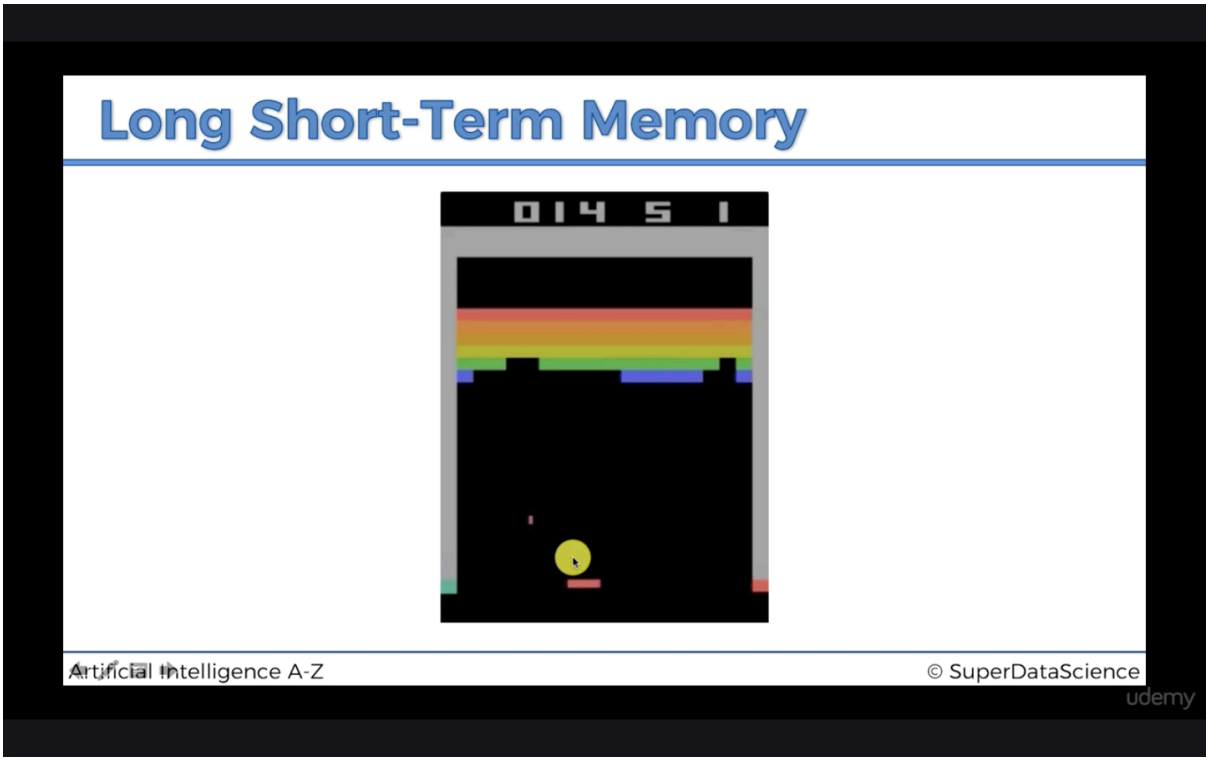


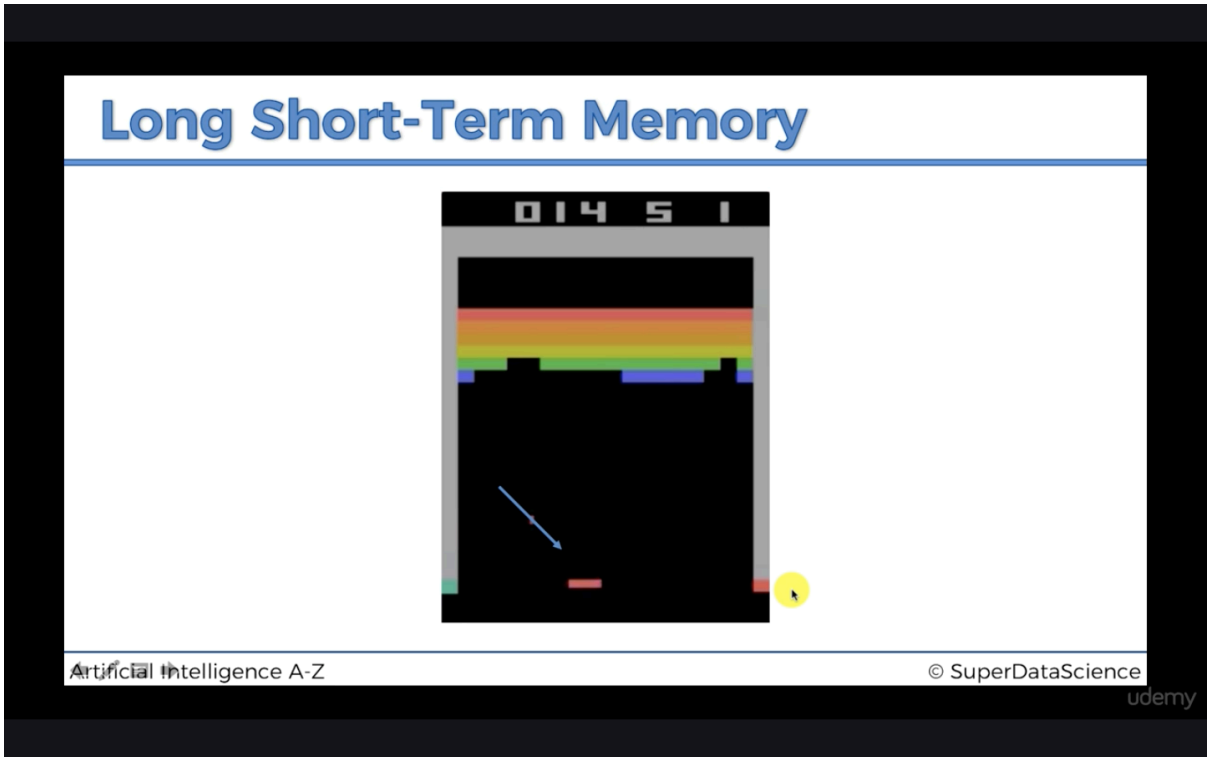
Remember that this is a layer itself.

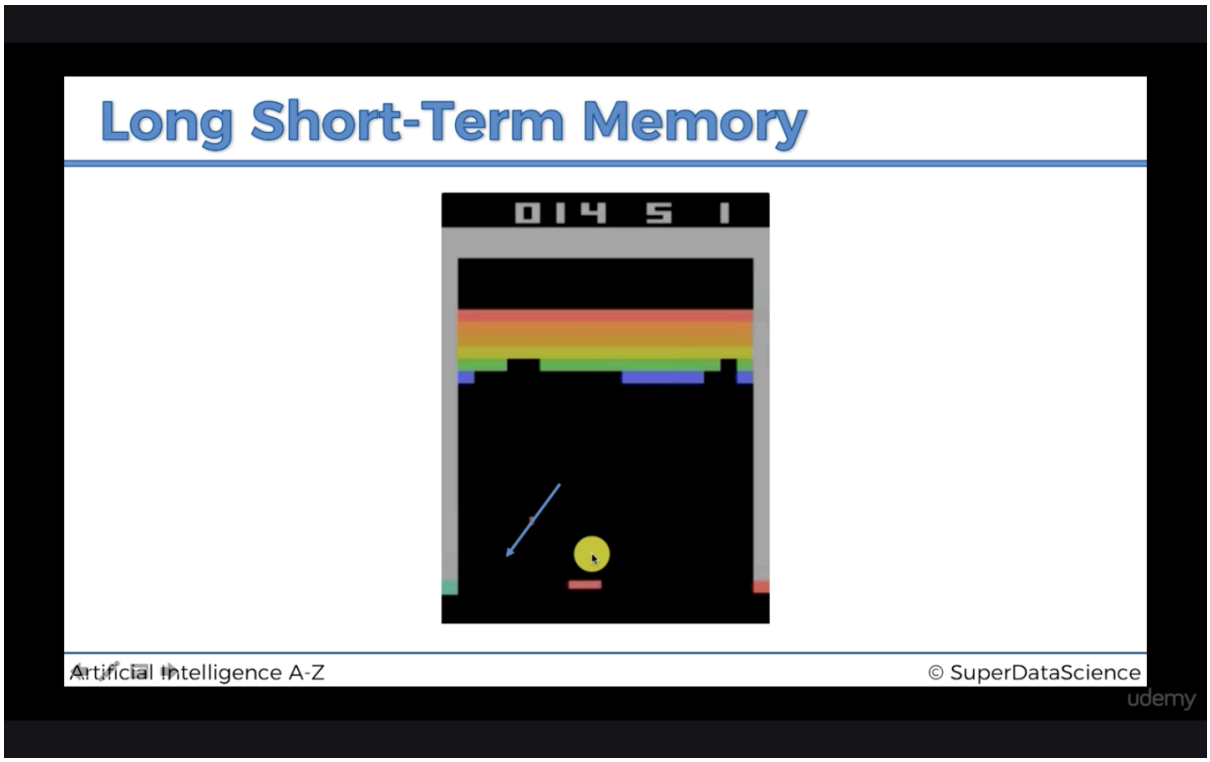




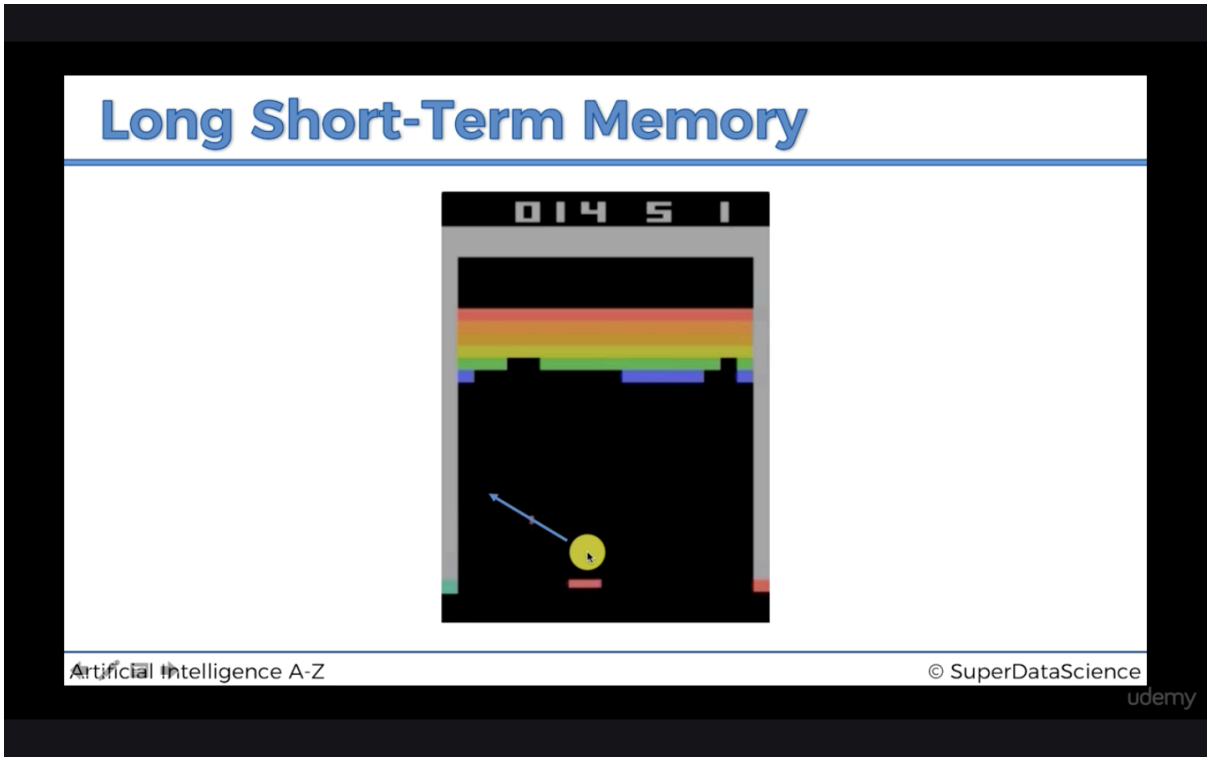
Time axis is between the two Cs.
The values from the left comes from the past and the right values go to the future. The important thing to note here is that here we have the previous values which we can add to them or do any other operation.
C is the constant value and h is the hidden state.







In here first LSTM will help to predict whether or not it goes up or down and second it helps for direction.



There are some ways that we can predict the direction put it's not as powerful as the LSTM.
That is why having previous values is so important.

LSTM is not 100% important for A3C. there are other ways too. It depends on the problem we are trying to solve.