Question: If you input a very long sentence, do you have problem of translation this sentence? If so, what could be potentially the problem?

Answer: Yes, there is a problem for translating long sentence.

Potential problem: It is difficult for a standard RNN to learning long-term dependencies. because the gradient of the loss function decrease exponentially with time (gradient vanish and exploding).

Question: What model or activation function can you use the improve long sentence translation?

Answer: I will use **LSTM**.

LSTM can deal with the vanishing gradient problem that can be encountered when training traditional RNN. LSTM's cell memory unit is different form RNN's cell. The cell vector has the ability to encapsulate the notion of forgetting part of its previously stored memory, as well as to add part of the new information.