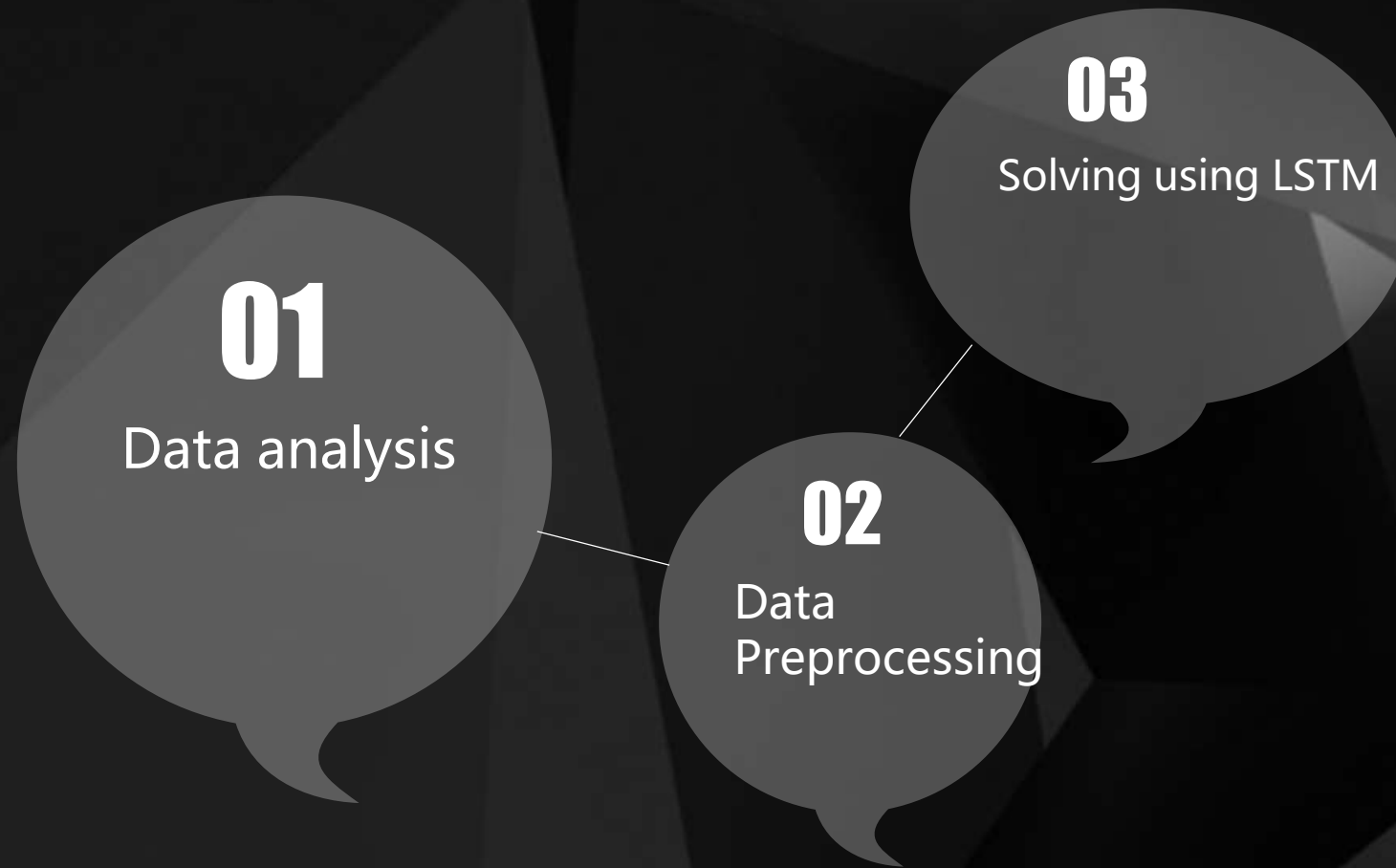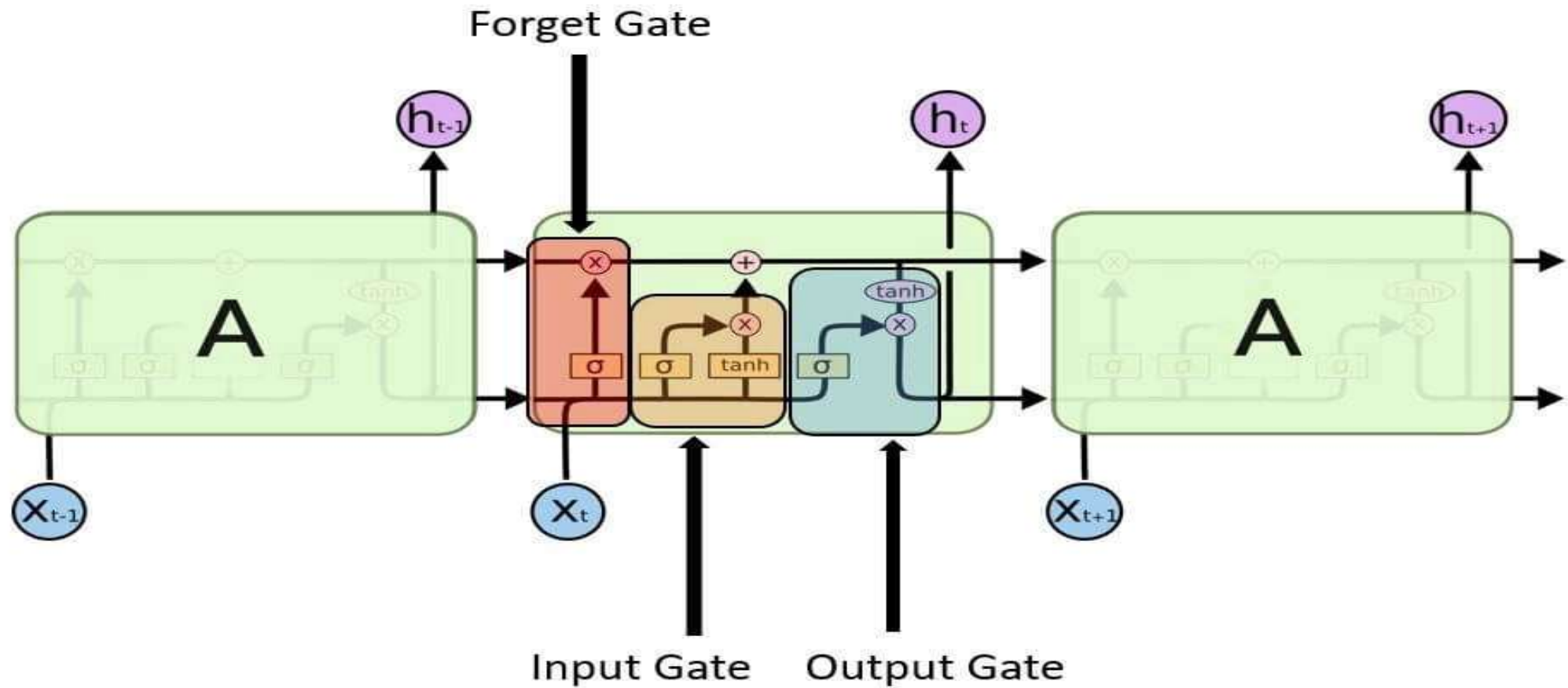# Electricity Price Prediction Using LSTM
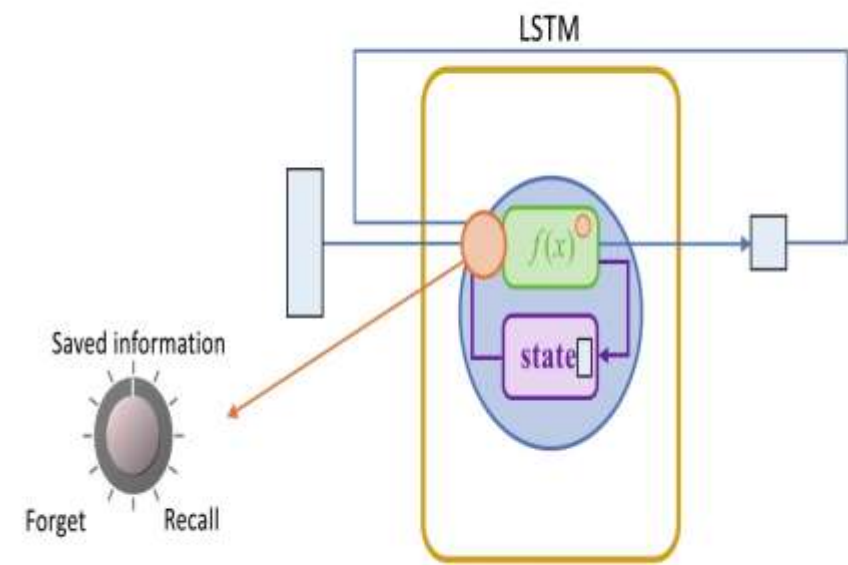
Contents

Introduction:

Long Short-Term Memory Networks is a deep learning, sequential neural network that allows information to persist. It can be used to predict electricity price

Steps involved:

03
Solving using LSTM

01
Data analysis

02
Data Preprocessing

How to solve LSTM Pohlems:

Input gate:

It determines which of the input values should be used to change the memory. The sigmoid function determines whether to allow 0 or 1 values through. And the tanh function assigns weight to the data provided, determining their importance on a scale of -1 to 1.
Input Gate | Long Short Term Memory

$$i_t = \sigma(W_i . [h_t - 1, x_t] + bi)$$
$$C_t = \tanh (W_C . [h_t - 1, x_t] + b_C)$$

Forget Gate:

It finds the details that should be removed from the block. It is decided by a sigmoid function. For each number in the cell state Ct-1, it looks at the preceding state (ht-1) and the content input (Xt) and produces a number between 0 (omit this) and 1 (keep this).
Forget Gate | Long Short Term Memory

$$f_t = \sigma(W_f . [h_t - 1, x_t] + b_f)$$

Output Gate:

The block's input and memory are used to determine the output. The sigmoid function determines whether to allow 0 or 1 values through. And the tanh function determines which values are allowed to pass through 0, 1. And the tanh function assigns weight to the values provided, determining their relevance on a scale of -1 to 1 and multiplying it with the sigmoid output.

$$O_t = \sigma(W_o[h_t - 1, x_t] + b_o$$
$$h_t = o_t * \tanh(C_t)$$

Conclusion:

Long short-term memory (LSTM) is a deep learning architecture based on an artificial recurrent neural network (RNN). LSTMs are a viable answer for problems involving sequences and time series.