

The LSTM Cell Structure

Forget Gate

Determines which information from the previous cell state to remember or forget, allowing the LSTM to selectively retain relevant data.

Input Gate

Decides which new information from the current input and previous hidden state to add to the cell state, enabling the LSTM to update its internal memory.

Cell State

The 'memory' of the LSTM, which is carefully regulated by the forget and input gates to maintain long-term dependencies.

Output Gate

Controls which parts of the cell state are used to produce the output, allowing the LSTM to selectively expose relevant information.