

Chapter17 Recurrent Neural Network

1. Slot Filling
 - a) 1-of-N Encoding
 - b) Beyond 1-of-N Encoding
 - i) Dimension of "other"
 - ii) Word hashing
2. SimpleRNN
 - a) The output of hidden layer are stored in the memory
 - b) Memory can be considered as another input
 - c) Changing the sequence order will change the output
 - d) Elman RNN
 - i) Hidden layer → hidden layer
 - e) Jordan RNN
 - i) Output layer → hidden layer
 - f) Bidirectional RNN
3. Long Short-term Memory
 - a) Four Inputs: Input, input gate signal, output gate signal, forget gate signal
 - b) One Cell: Memory Cell
 - c) One Output: Output of output gate
 - d) The activation function of gates usually is sigmoid function
 - e) Usually 4 times of parameters than other neural networks