

## On Dialogue Systems Based on Deep Learning

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**Abstract :** Nowadays, dialogue systems increasingly become the way for humans to access many computer systems. So, humans can interact with computers in natural language. A dialogue system consists of three parts: understanding what humans say in natural language, managing dialogue, and generating responses in natural language. In this paper, we survey deep learning based methods for dialogue management, response generation and dialogue evaluation. Specifically, these methods are based on neural network, long short-term memory network, deep reinforcement learning, pre-training and generative adversarial network. We compare these methods and point out the further research directions.

**Keywords :** dialogue management, response generation, deep learning, evaluation

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