

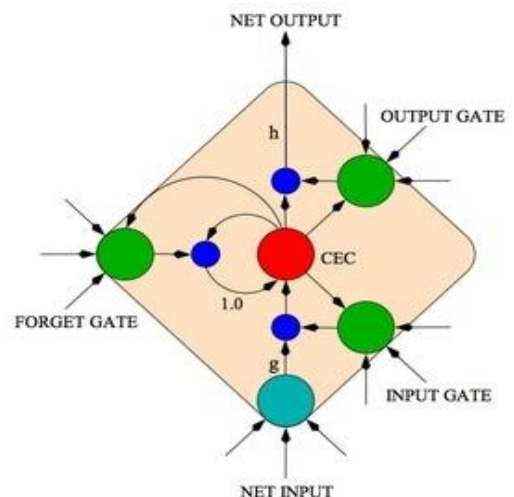
Recurrent Neural Networks for Ball Trajectory & Spin Prediction

Many learning tasks require dealing with sequential data. Recurrent neural networks (RNNs) are connectionist models that capture the dynamics of sequences via cycles in the network of nodes. A special class of recurrent neural networks, LSTM (long short term memory) networks, have demonstrated very good performance

The goal of this work is to train a special class of recurrent neural networks, LSTM (long short term memory) networks or one of its variants to predict the ball trajectory and spin for a table tennis robot. The data collection will be a part of this work as a ball throwing machine to generate many ball trajectories is available, as well as algorithms for ball trajectory prediction and camera based ball spin determination. Based on this data, the direction and the spin of the ball after bouncing on the table should be predicted. Optionally, the behavior of the ball after hitting the robots racket should be predicted as well.

Requirements:

- Knowledge in Neural Networks
- Knowledge about LSTM is a plus
- Programming skills (Preferably Python)



Kontakt

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