

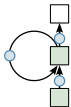
# LSTM

## Memory Cells

- Constant Error Carousel
- Sigmoid Gating
- Recurrent Inference
- Recurrent Training

$$c_t = f_t c_{t-1} + i_t z_t$$

$$h_t = o_t \psi(c_t)$$



# Memory Cells

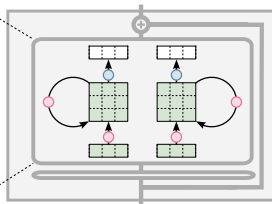
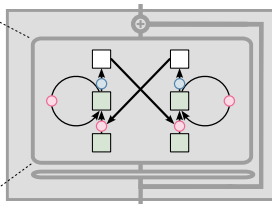
## sLSTM

- + Exponential Gating
- + New Memory Mixing

## mLSTM

- + Exponential Gating
- + Matrix Memory
- + Parallel Training
- + Covariance Update Rule

# xLSTM Blocks



# xLSTM

