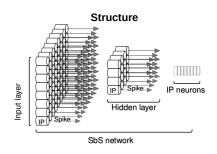
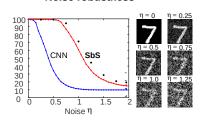
## Spike-by-Spike Neural Network



## Noise robustness



## Neuron update

$$h_{\mu}^{new}(i) = \frac{1}{1+\epsilon} \left( h_{\mu}(i) + \epsilon \frac{h_{\mu}(i)W(s_t|i)}{\sum_j h_{\mu}(j)W(s_t|j)} \right)$$

Non-negativity  $0 \le W(s_t|j) \le 1$