

$$K(\mathbf{k}_t, \mathbf{M}_t(i)) = \frac{\mathbf{k}_t \cdot \mathbf{M}_t(i)}{\|\mathbf{k}_t\| \|\mathbf{M}_t(i)\|}, \quad (2)$$

which is used to produce a read-weight vector, \mathbf{w}_t^r , with elements computed according to a softmax:

$$w_t^r(i) \leftarrow \frac{\exp(K(\mathbf{k}_t, \mathbf{M}_t(i)))}{\sum_j \exp(K(\mathbf{k}_t, \mathbf{M}_t(j)))}. \quad (3)$$

A memory, \mathbf{r}_t , is retrieved using this weight vector:

$$\mathbf{r}_t \leftarrow \sum_i w_t^r(i) \mathbf{M}_t(i). \quad (4)$$