

$$\begin{array}{c}
 \left[\begin{array}{c}
 \begin{array}{c} X \\
 \begin{array}{c} x_1 \\
 x_2 \\
 x_3 \\
 x_4 \\
 \vdots \\
 x_N \end{array} \\
 N \times d \end{array} \right] \times \left[\begin{array}{c} W^K \\
 d \times d_k \end{array} \right] = \left[\begin{array}{c} K \\
 \begin{array}{c} k_1 \\
 k_2 \\
 k_3 \\
 k_4 \\
 \vdots \\
 k_N \end{array} \\
 N \times d_k \end{array} \right]
 \end{array}$$