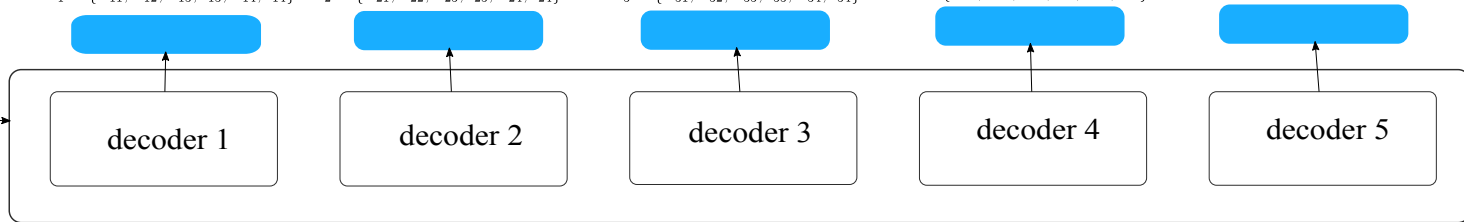Parameterization network

$P_1 = \{w_{11}, w_{12}, w_{13}, b_{13}, w_{14}, b_{14}\}$ $P_2 = \{w_{21}, w_{22}, w_{23}, b_{23}, w_{24}, b_{24}\}$ $P_3 = \{w_{31}, w_{32}, w_{33}, b_{33}, w_{34}, b_{34}\}$ $P_4 = \{w_{41}, w_{42}, w_{43}, b_{43}, w_{44}, b_{44}\}$ $P_5 = \{s_5\}$

| decoder 1 | decoder 2 | decoder 3 | decoder 4 | decoder 5 |

Semantic network

1024 vertices P_1 1024 vertices P_2 1024 vertices P_3 1024 vertices P_4 P_5 1024 vertices

K-neighbor PointNet   data tensor   Laplacian smooth $\oplus$ addition $\odot$ element multiply