

# Simplex prediction

## Generalization of link prediction

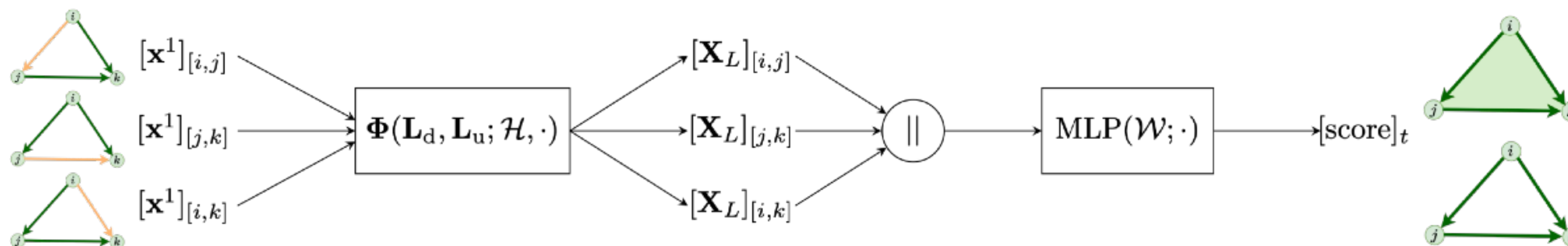


Table 2: Simplex prediction (AUC,  $\uparrow$ ) .

Methods	2-simplex	3-simplex
Mean (Benson et al., 2018)	62.8 $\pm$ 2.7	63.6 $\pm$ 1.6
MLP	68.5 $\pm$ 1.6	69.0 $\pm$ 2.2
GNN (Defferrard et al., 2016)	93.9 $\pm$ 1.0	96.6 $\pm$ 0.5
SNN (Ebli et al., 2020)	92.0 $\pm$ 1.8	95.1 $\pm$ 1.2
PSNN (Roddenberry et al., 2021)	95.6 $\pm$ 1.3	98.1 $\pm$ 0.5
SCNN (Yang et al., 2022a)	96.5 $\pm$ 1.5	98.3 $\pm$ 0.4
Bunch (Bunch et al., 2020)	98.3 $\pm$ 0.5	98.5 $\pm$ 0.5
MPSN (Bodnar et al., 2021b)	98.1 $\pm$ 0.5	99.2 $\pm$ 0.3
<b>SCCNN</b>	<b>98.7<math>\pm</math>0.5</b>	<b>99.4<math>\pm</math>0.3</b>

# **3. Hodge-compositional Gaussian processes**