





Figure 4: Architecture of our models. (a) The overall architecture. Given node feature X , adjacency matrix A and target link (i, j) , models first set $A_{ij} = 0$ (Target link removal, TLR). Then, \bar{A}, X are feed to a vanilla MPNN for node representations h . With (i, j) , h and A as input, the predictor produces \hat{A}_{ij} , the probability that edge (i, j) exists. (b) The NCN predictor. It use node representation of target nodes i, j and their common neighbors to produce edge representations. Then, it feeds the edge representation to a MLP to produce final prediction. (c) The NCNC predictor. It first uses NCN to predict unobserved links $\hat{A}_{ik}, \hat{A}_{jk}$, which is then used to complete unobserved common neighbors.