

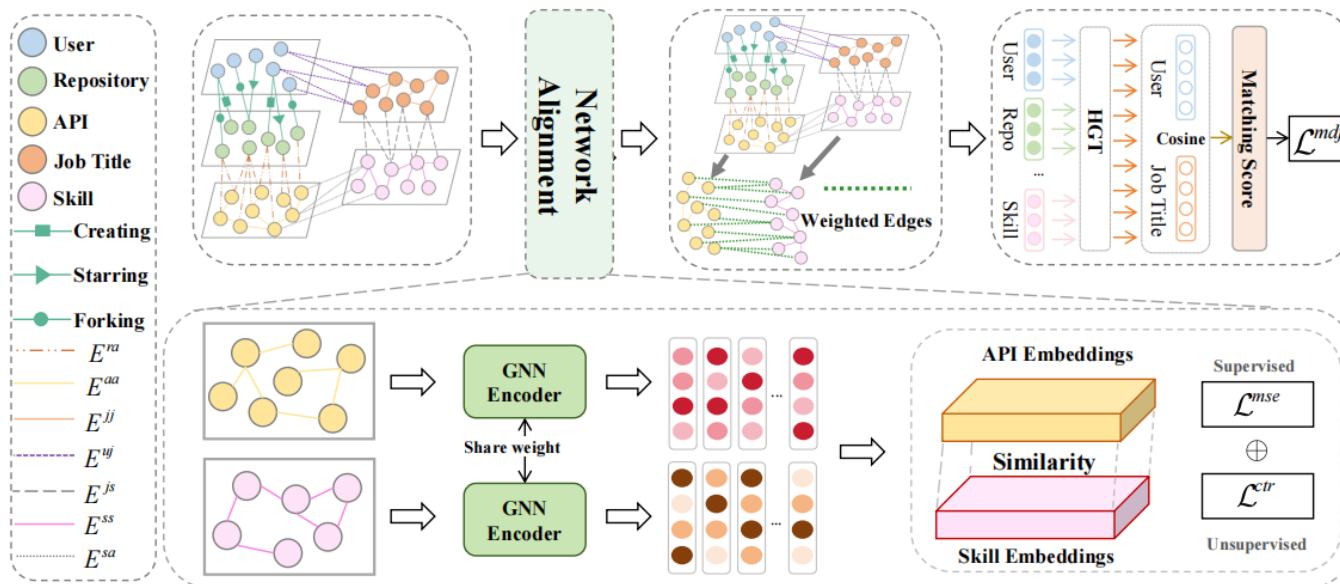
MDJOSC: Matching Digital Talents and Job Titles in Open Source Communities

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Problems & Ideas

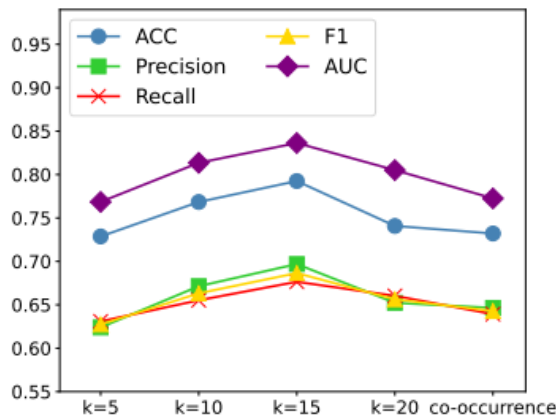
- Problems of connecting open source contributions and employment opportunities :
 - Existing person-job matching systems rely on private HR data, leaving a gap in connecting public open source activities with job opportunities.
- Ideas: Matching digital talents and job titles via a heterogeneous graph built from GitHub and LinkedIn data, with API-skill alignment and graph representation learning.



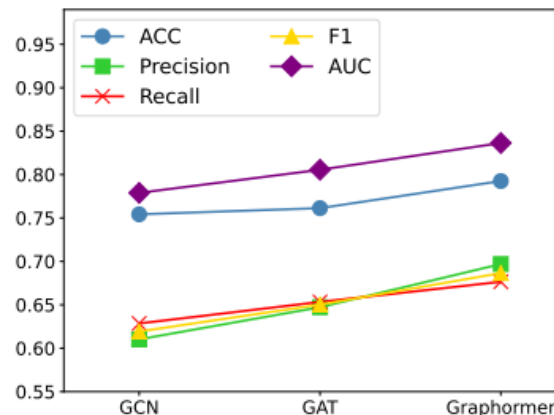
- (1) Aligning APIs and skills via a network alignment model to strengthen weighted links between API and skill nodes (lower part).
- (2) Applying Heterogeneous Graph Transformer on the augmented heterogeneous graph to learn the talent and job title representations, which are used to compute the matching scores between them (upper part).

Main Contributions

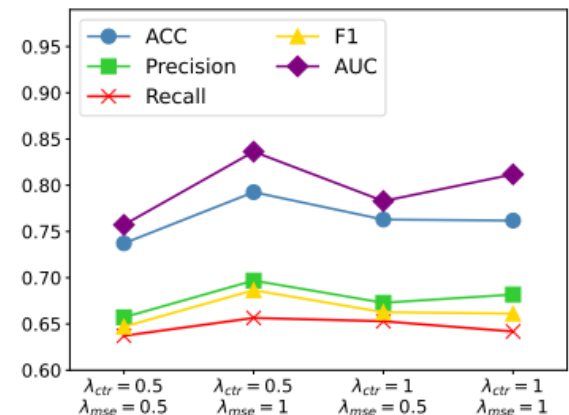
- Contributions:
 - A novel task, MDJOSC, is introduced to match digital talents and job titles based on open source expertise and job skills, addressing the gap between open source activities and employment opportunities;
 - A heterogeneous information network (OSCHIN) is constructed from GitHub and LinkedIn data, with a network alignment model designed to bridge APIs and skills via weighted connections;
 - Heterogeneous Graph Transformer (HGT) is employed to learn talent and job title representations for matching, and extensive experiments demonstrate the superiority of the proposed approach.



(a) Varying k .



(b) Varying the GNN encoder.



(c) Varying λ .

Hyperparameter analysis on the number of neighbors k (Figure (a)), the GNN encoders (Figure (b)), and the weights of the losses (λ_{ctr} , λ_{mse}) (Figure (c)).