# Incorporating Metapath Interaction on Heterogeneous Information Network for Social Recommendation

**Yanbin JIANG, Huifang MA, Xiaohui ZHANG, Zhixin LI, Liang CHANG**

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# Problems & Ideas

- Problems of social recommendation on HIN:
  - Existing works mainly convert heterogeneous graphs into homogeneous graphs via defining metapaths, which are not expressive enough to capture more complicated dependency relationships involved on the metapath.
  - Heterogeneous information is more likely to be provided by item attributes while social relations between users are not adequately considered.

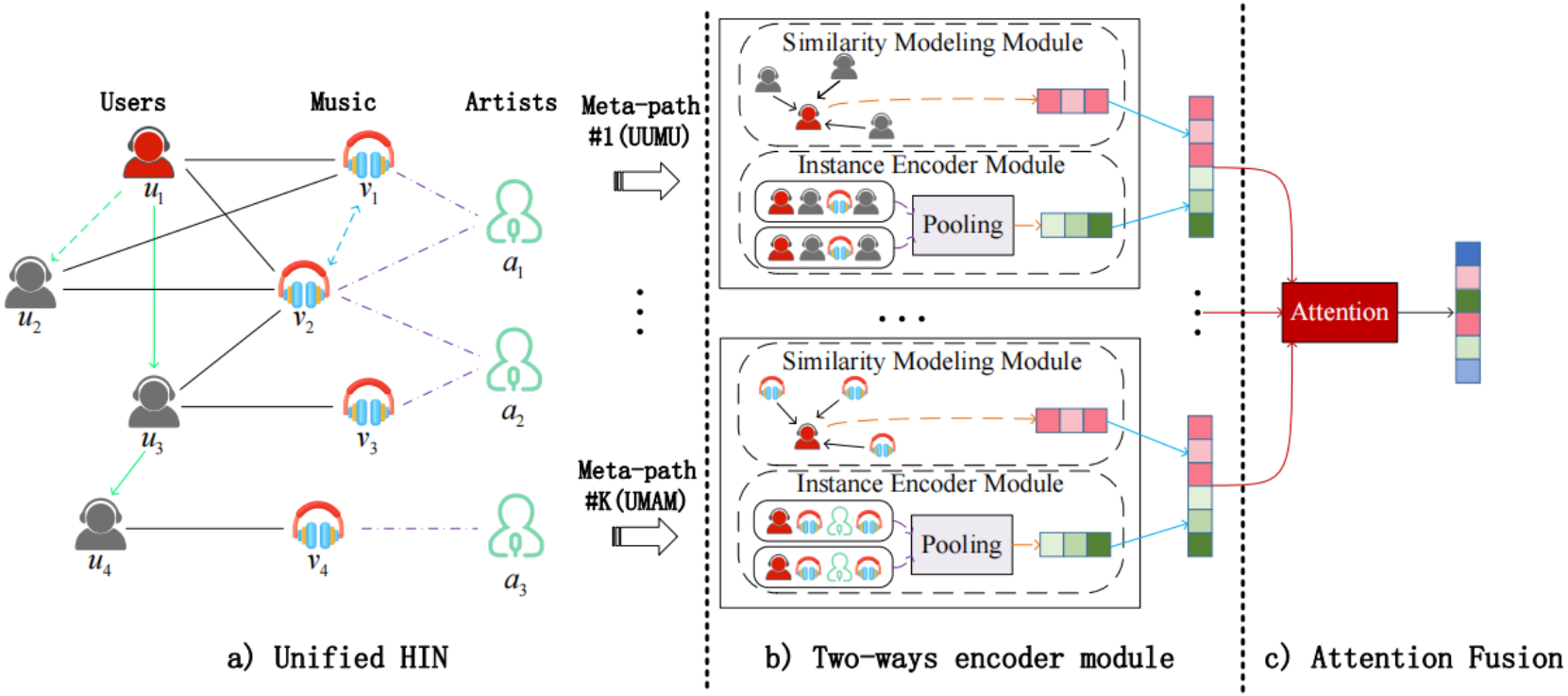


Fig.1 An illustration of MPISR model framework.

# Main Contributions

- Contributions:
  - We explicitly explore implicit relations through the similarity of pre-trained embeddings, and incorporate these relations into a unified heterogeneous;
  - In order to learn a more efficient representation, we present an innovative two-way encoder module, which explores the complex relation interaction semantics between the nodes on different metapaths.

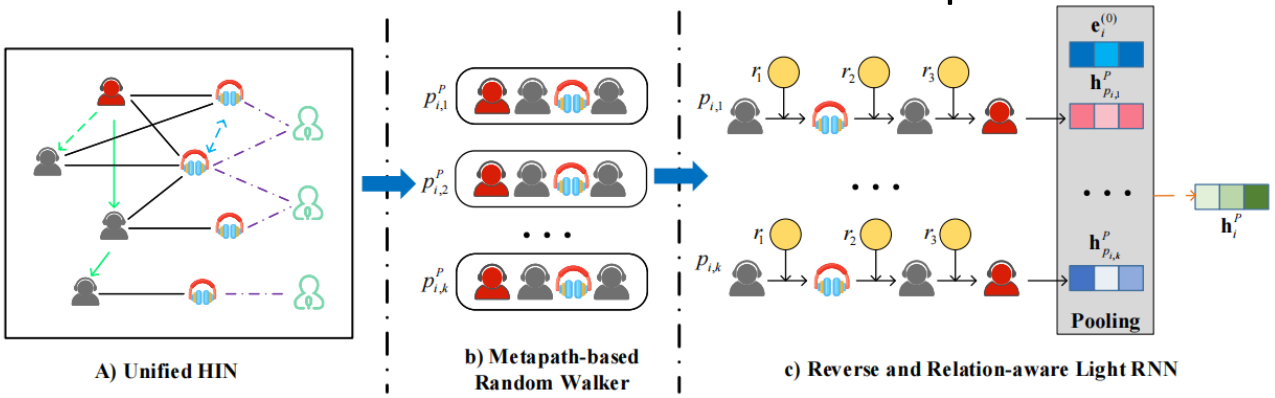


Fig.2 Illustration of instance encoder for node $i$ on metapath $P$.

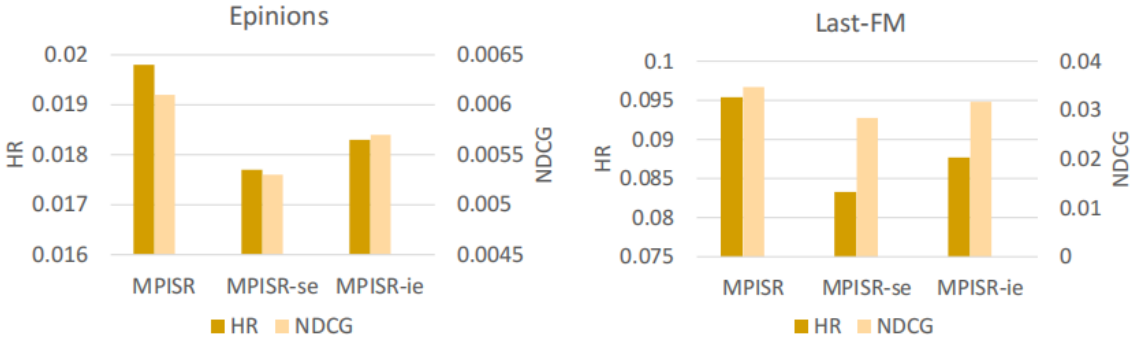


Fig.3 Experimental results of the effect of two different encoders.