Xin Mei

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Research Interests

Data Mining, Natural Language Processing, Network Representation Learning and Knowledge Graph Representation Learning

Education

- **Northwestern Polytechnical University (NWPU)**, Xi'an, China 2019 – Present
  M.S. in Cyber Science and Technology, expected Apr. 2022
  GPA: 3.6/4.0 (89.94/100)
- **Northwestern Polytechnical University (NWPU)**, Xi'an, China 2015 – 2019
  B.E. in Information security, Automation
  Obtained the qualification to recommend exemption graduate students

Research & Publications

- Participate in research projects:
  Focus on learning of **heterogeneous network representation**. Participate in research on **text representation learning based on graph neural network**, citation recommendation and drug repurposing based on heterogeneous network representation learning, and **knowledge graph representation learning**. The work includes cutting-edge research and discussion ideas, using PyTorch or Tensorflow to realize ideas (data processing, model construction, debugging), conducting experiments (hyperparameter optimization and code adjustment), and write papers. Currently, I am participating in the research of entity linking in the temporal knowledge graph.

- Xiaoyan Cai[1], **Xin Mei**[1], Sen Xu, Wenjie Li, Shirui Pan and Libin Yang. **Mutually Reinforced Network Embedding: An Integrated Approach to Scientific Paper Recommendation.** IEEE Transactions on Cybernetics. (Under review) ([1] means Equal Contribution)
  - •Participate in the construction of heterogeneous networks, propose to combine co-author networks and citation networks, and mine the relationship between co-authorships and papers to better capture the interactive information between authors and papers, and make implementation in code.
  - • In the experiment, mutual and update the embeddings obtained from two levels (text and structure) and tune the hyperparameters to make the model performance better.
  - • Reproduce the existing citation recommendation models and write down the corresponding parts in paper to clarify that our model is superior to other models in performance.

- **Xin Mei**, Xiaoyan Cai, Libin Yang, Nanxin Wang. **Graph Transformer Networks based Text Representation.** Neurocomputing, pages 91-100, 2021.
  - • Propose a degree-centric text graph construction method. It lets more important nodes receive more semantic information and the location information of each word node in the original document is retained.
  - • Propose a Havel-Hakimi algorithm-based method to adjust the degree of nodes in the text graph to better express the semantic information and make implementation in the code.
  - • Write the paper under the guidance of Prof. Cai and Prof. Yang.

- **Xin Mei**, Xiaoyan Cai, Libin Yang, Nanxin Wang. **Relation-aware Heterogeneous Graph Transformer Based Drug Repurposing.** Expert Systems with Applications. (Under review)
  - Mine the characteristics of biological data and propose to identify drug-disease associations based on the relationship between drug-gene edges and gene-disease edges.
  - Propose a three-level heterogeneous network embedding model and implement it in the code.
  - Write the paper under the guidance of Prof. Cai and Prof. Yang.

Honors and awards

- 2016-2020: The first-grade scholarship (5 times) Northwestern Polytechnical University.
- 2018: MCM, Honorable Mention. Consortium for Mathematics and Its Application, America. (MCM is short for Mathematical Contest in Modeling)

Skills

- Programming Languages: Python, C/C++
- Frameworks: PyTorch, Tensorflow
- Neural network models: GAT, GCN, CNN, Transformer
- Others and Soft Skills: LaTex, Anaconda