Yang Yongyi

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Education

School of Computer Science and Technology, Fudan University   Shanghai, China
B.S. in Computer Science   2017.9 – 2022.6 (expected)

Publications and Manuscripts

Graph Neural Networks Inspired by Classical Iterative Algorithms
Yongyi Yang, Tang Liu, Yangkun Wang, Jinjing Zhou, Quan Gan, Zhewei Wei, Zheng Zhang, Zengfeng Huang, David Wipf.
· Published at ICML 2021 (Selected for long talk 3% acceptance rate).

Why Propagate Alone? Parallel Use of Labels and Features on Graphs
Yangkun Wang, Jiarui Jin, Weinan Zhang, Yongyi Yang, Jiuhai Chen, Quan Gan, Yong Yu, Zheng Zhang, Zengfeng Huang, David Wipf.
· Accepted by ICLR 2022.

Transformers from an Optimization Perspective
Yongyi Yang, Zengfeng Huang, David Wipf
· arxiv preprint.

Implicit vs Unfolded Graph Neural Networks
Yongyi Yang, Yangkun Wang, Tang Liu, Zengfeng Huang, David Wipf.
· Under review.

Relation of the Relations: A New Paradigm of the Relation Extraction Problem
Zhijing Jin*, Yongyi Yang*, Xipeng Qiu, Zheng Zhang.
· arxiv preprint.

Research Experience

Optimization Induced Deep Learning   2021-2022
Advisor: Dr. David Wipf, Prof. Zengfeng Huang.
· Studied the methods of interpreting deep learning model forward layers as the unfolding of optimization process, proposed several major problems and corresponding preliminary solutions.

Deeper and More Robust Graph Neural Networks   2020-2021
Advisor: Dr. David Wipf, Prof. Zengfeng Huang.
· Designed a novel way to construct GNNs through energy function optimization unfolding, which is interpretable and exhibits robustness against oversmoothing and graph perturbation. Conducted numerous empirical experiments to verify the effectiveness of proposed model.
· Studied the relationship between implicit graph models and unfolding based models, revealing their inherent similarity and difference in aspects including convergence, expressivity and interpretability, both in theory and in practice.
· Assisted in some other research works.

Relation Extraction   2019-2020
Advisor: Prof. Xipeng Qiu, Prof. Zheng Zhang.
· Proposed a novel way to deal with relation extraction by modeling relations and entities as graphs. Proposed two different methods to make use of inter-relation information to boost the performance of current relation extraction models and conducted several experiments to verify the proposed method.

Working Experience

Amazon Shanghai AI Lab   Shanghai, China
Applied Scientist Intern   2019.10 – present
· Supervised by Dr. David Wipf, Prof. Zengfeng Huang and Prof. Zheng Zhang, Prof. Xipeng Qiu.
· Conducted a series of research works related to GNN's application in NLP and basic GNN models.

Competition Experience

Silver Medal, China Collegiate Programming Contest, Qinhuangdao Regional   2017
Silver Medal, National Olympiad in Informatics, National Finals   2016
First Prize, National Olympiad in Informatics, Sichuan Division   2015

Skills

Language: Chinese (Native), English (TOFEL iBT: 100)
Programming: Python, C/C++, Javascript