JUNCHI YU

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EDUCATION

Institute of Automation, Chinese Academy of Sciences Sep. 2019 - Present
Ph.D. Candidate (MS-straight-to-PhD) in Pattern Recognition and Machine Intelligence *Beijing, CN*

- Advisor: Prof. Ran He
- Awards: Ph.D. National Scholarship, Bao Gang Scholarship

Department of Computer Science, Yale Univerisity Jan. 2023 - Present
Visiting Student, working on Trustworthy Graph Learning with Applications to AI4Sciences *New Haven, US*

- Advisor: Prof. Rex Ying

Wuhan University Sep. 2015 - June 2019
Bachelor of Electrical Engineering (GPA Rank 1/328) *Wuhan, CN*

- Awards: National Scholarship, Outstanding Graduate

PUBLICATIONS

- **Junchi Yu**, Jian Liang, Ran He, Mind the Label-Shift of Augmentation-based Graph Out-Of-Distribution Generalization, in **CVPR**, 2023.
- **Junchi Yu**, Jie Cao, Ran He, Improving Subgraph Recognition with Variational Graph Information Bottleneck, in **CVPR**, 2022.
- **Junchi Yu**, Tingyang Xu, Yu Rong, Yatao Bian, Junzhou Huang, Ran He, Graph Information Bottleneck for Subgraph Recognition, in **ICLR**, 2021.
- **Junchi Yu**, Jie Cao, Yi Li, Xiaofei Jia, Ran He, Pose-preserving Cross Spectral Face Hallucination, in **IJCAI (Oral)**, 2019.
- **Junchi Yu**, Tingyang Xu, Yu Rong, Yatao Bian, Junzhou Huang, Ran He, Recognizing Predictive Substructures with Subgraph Information Bottleneck, in IEEE Transactions on Pattern Analysis and Machine Intelligence **(TPAMI)**, 2021.
- **Junchi Yu**, Tingyang Xu, Yu Rong, Junzhou Huang, Ran He, Structure-aware VAE for Constrained Molecule Optimization. Pattern Recognition (**PR**), 2021.
- Bingzhe Wu, Yatao Bian, Hengtong Zhang, Jintang Li, **Junchi Yu**, Liang Chen, Chaochao Chen, Junzhou Huang, Trustworthy Graph Learning: Reliability, Explainability, and Privacy Protection. Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**Tutorial of KDD**), 2022.

RESEARCH EXPERIENCE

Trustworthy Graph Learning with Applications to AI4Sciences Mar. 2021 - Present

- We study the interpretable and generalizable deep graph models, such as graph neural networks. We propose a property-invariant subgraph augmentation scheme to synthesize diverse augmented populations for OOD generalization.
- We develop reliable and robust models for AI4Sciences tasks, such as molecule/protein design and docking.

Interpretable and Robust Graph Model May. 2020 - Mar. 2021

- Most graph models, such as graph networks, lacks intrinsic interpretability and robustness to noise. Thus, we propose a novel information-theoretic framework to recognize an informative and noise-free subgraph of the input for the built-in interpretability and robustness. We also propose a regularization based on min-cut problem to generate compact subgraph.

Graph-based Molecule Generation and Optimization May. 2019 - May. 2020

· We propose a structure-aware conditional generative model designed for generating graph-structured data. The synthesized graphs enjoy desired properties and limited structural modification with the proposed latent graph alignment module.

ACADEMIC SERVICES

· **Reviewer:** ICML, CVPR, NeurIPS, Pattern Recognition, Medical Image Analysis.
· **Tutorial:** Trustworthy Graph Learning@KDD 2022, Advanced Deep Graph Learning@WWW 2021.
· **Talk:** Invited talk at TMLR Young Scholar Seminar, Bo Han' Group (Subgraph-based Trustworthy Graph Learning with Interdisciplinary Applications).
· **Internship:** Previous Research Intern at Tencent AI Lab, working with Dr. Tingyang Xu, Dr. Yu Rong, Dr. Yatao Bian and Prof. Junzhou Huang.