

Zuobai Zhang

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Education

Mila - Québec AI Institute / Université de Montréal

Montréal, Québec, Canada

Ph.D. in Computer Science

Sept. 2021 – present

- Advisor: Jian Tang
- Research Direction: Graph Representation Learning, Drug Discovery

Fudan University

Shanghai, China

B.S. in Computer Science (Honor Class)

Sept. 2017 – Jun. 2021

- Advisor: Zhongzhi Zhang
- Research Direction: Graph Mining, Network Science, Spectral Graph Theory
- (First three years) GPA: 3.93/4.0, Major GPA: 3.99/4.0, Ranking: 1/145
- (Overall) GPA: 3.86/4.0, Ranking: 1/145

Internship

ByteDance Inc.

Shanghai, China

Machine Learning Engineering Intern

Sept. 2020 – Jan. 2021

- Worked in Data-Rec Shanghai Group led by Yitan Li.
- Designed machine learning algorithms to improve the recommender system of Toutiao and developed new features in real-world products.

Publications

- **Learning Interpretable Cellular and Gene Signature Embeddings from Single-Cell Transcriptomic Data.**
Yifan Zhao*, Huiyu Cai*, **Zuobai Zhang**, Jian Tang, Yue Li
Nature Communications
- **Minimizing Spectral Radius of Non-Backtracking Matrix by Edge Removal.**
Zuobai Zhang, Zhongzhi Zhang, Guanrong Chen
CIKM 2021
- **Coherence Scaling of Noisy Second-Order Scale-Free Consensus Networks.**
Wanyue Xu, Bin Wu, **Zuobai Zhang**, Zhongzhi Zhang, Haibin Kan, Guanrong Chen
IEEE Transactions on Cybernetics
- **Opinion Dynamics Incorporating Higher-Order Interactions.**
Zuobai Zhang, Wanyue Xu, Zhongzhi Zhang, Guanrong Chen
ICDM 2020 (short paper)
- **Power-Law Graphs Have Minimal Scaling of Kemeny Constant for Random Walks.**
Wanyue Xu, Yibin Sheng, **Zuobai Zhang**, Haibin Kan, Zhongzhi Zhang
The Web Conference 2020
- **Fast Approximation of Coherence for Second-Order Noisy Consensus Networks.**
Zuobai Zhang, Wanyue Xu, Yuhao Yi, Zhongzhi Zhang
IEEE Transactions on Cybernetics
- **Nearly Linear Time Algorithm for Mean Hitting Times of Random Walks on a Graph.**
Zuobai Zhang, Wanyue Xu, Zhongzhi Zhang
WSDM 2020

Preprints

- **Neural Bellman-Ford Networks: A General Graph Neural Network Framework for Link Prediction.**
Zhaocheng Zhu, Zuobai Zhang, Louis-Pascal Xhonneux, Jian Tang
arXiv

Selected Projects

- **TorchDrug: A Powerful and Flexible Machine Learning Platform for Drug Discovery.** (with TorchDrug team)
A machine learning platform designed for drug discovery, covering techniques from graph machine learning, deep generative models to reinforcement learning.
[Homepage] [Github] [Twitter]

Honors & Awards

Outstanding Undergraduates Graduates of Shanghai	Jun. 2021
Scholarships for Outstanding Academic Individuals at Fudan University	Dec. 2020
Shanghai Scholarship (Top 1%)	Oct. 2020
SenseTime Scholarship (29 undergrads from China)	Jan. 2020
Chinese National Scholarship (Top 1%)	Oct. 2019
Chun Tsung Scholar Program	Apr. 2019
Wish Scholarship	May 2019
Chinese National Scholarship (Top 1%)	Oct. 2018
Gold Medal, ACM-ICPC Asia Regional Contest EC-Final	Dec. 2017
Gold Medal, ACM-ICPC Asia Regional Contest Qingdao Site	Nov. 2017
Silver Medal, National Olympiad in Informatics, National Finals	Jul. 2016
Gold Medal, Winter Camp of National Olympiad in Informatics	Jan. 2016
First Prize (2nd place), National Olympiad in Informatics, Shandong Division	Nov. 2015

Skills

- **Programming Languages:** Python, C/C++, \LaTeX , Julia, JavaScript, MATLAB, HTML
- **Language:** Chinese-Native, English-Fluent (**GRE:** 162+169+4.0)