Wei Lin

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Publication List

Prof. Sebastian Wandelt, **Lin Wei**, et al. "From random failures to targeted attacks in network dismantling." Reliability Engineering System Safety (2021): 108146 IF=6.188(Q1) DOI

Lin Wei, Prof. Sebastian Wandelt, and Prof. Xiaoqian Sun. "Efficient network dismantling through genetic algorithms." Soft Computing (2021): 1-19. IF=3.643(Q2) DOI

Education

Beihang University (Rank 0.3% in the university entrance exam) **Sep. 2019 – June 2023(expected)**

BSE Mechanical Engineering GPA:3.83/4 90.7/100 IELTS:7.0

Relevant Courses

- Calculus(100)
- Probability and Statistic(100)
- Data management & AI(100)
- Intro. to python(100)
- Linear algebra(95)
- Numerical analysis(95)
- Deep learning(96)
- NLP(91)

Research Experience

Graph learning on Hyperbolic Space **May 2022 – Current**

Research Intern Supervised by Prof. Irwin King

- Studying how to build graph neutral networks in a Riemannian space.
- Compare the performance of different encoders and decoders in hyperbolic Spaces on multiple downstream tasks.
- Study the application of hyperbolic graph neural networks in recommendation system.

From Random Failures to Targeted Attacks in Network Dismantling **Jan 2021 – April 2021**

Undergraduate Researcher Supervised by Prof. Sebastian Wandelt

- Proposed an efficient transformation process that is able to convert a collection of random failure traces generated by purely random node sequences into highly effective attacks, inspired by recent works on the node explosive percolation.
- Designed an iterative framework for the scalable computation of network attacks, which gradually performs moree detailed attack revisions.
- Performed a sensitivity analysis to do the parameter tuning on the proposed framework.

Efficient Network Dismantling Through Genetic Algorithm **July 2020 – March 2021**

Undergraduate Researcher Supervised by Prof. Sebastian Wandelt

- Designed an exact method for measuring the effectiveness of a dismantling strategy for a network with linear runtime of the network size, which is significant faster than existing methods.
- Proposed a novel network dismantle technique based on genetic algorithms.
- Perform sensitivity analysis on variants of our method, including different choices of the initial population and genetic parameters.
- Applied the Bayesian signed-up rank Test to compare our algorithm with other state-of-the-art methods.

Contest Experience

Finalist in Interdisciplinary Contest In Modeling (Top 1% among competitors worldwide) **2021**

Theme: Unveil the Mystery behind Musical Evolution

- Build up a computational framework to evaluate the effect of musical influence on the temporal and spatial development of artist and genre.
- Use Heterogeneous Euclidean-Overlap Metric to measure the music similarity.
- Propose the General Index of Genre Development based on the combined effect of I-index, popularity and release frequency of intra-genre artists.

Teaching Experience

Teaching Assistance, Computer science and Programming **September 2020 – January 2021**

Teaching Assistance, Data Management and Artificial Intelligent **March 2021 – June 2021**

- Python Fundamental.
- Data Structure.
- Database System and SQL.
- Heuristic searching algorithms.

Scholarship/Award

2019-2021 Studies Excellent Scholarship of BUAA (Top 10%)
2019-2020 University-level Excellent Student (Top 5%)
2020-2021 University-level merit student (Top 5%)
The first prize of 2021 Beihang Academic Competition Scholarship (Top 5%)
2020-2021 University-level social work Outstanding Second prize (Top 20%)