Fan Huang

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EDUCATION

East China Normal University Sep 2023 - present
Master of Big Data Technology and Engineering GPA : 3.38/4.00

University of Shanghai for Science and Technology Sep 2019 - Jun 2023
Bachelor of Intelligent Science and Technology GPA : 4.05/4.5 Rank:3/51

RESEARCH EXPERIENCE

Diffusion-augmented Graph Contrastive Learning for Collaborative Filtering Sep 2024 - Apr 2025

- Designed a Diffusion-augmented Graph Contrastive Learning (DGCL) framework, introducing a novel data augmentation paradigm to address data sparsity and semantic inconsistency in Collaborative Filtering.
- Integrated forward noise injection and transformer-based reverse denoising to learn the Gaussian distributions of node representations, outperforming uniform noise-based methods (SimGCL) by 1.23% in NDCG@10 on Douban-Book.

Influence Maximization in Open Source Software Community based on Collaboration Network Jan 2024 - Feb 2025

- Constructed a benchmark dataset and evaluation of collaboration network in the open source software community.
- Formulated the influence evaluation as the influence maximization problem in the open source software community.
- Proposed a heuristic-based influence maximization algorithm named OpenRank+, accommodating the dynamic and heterogeneous features of the GitHub community, exceeding the PageRank 230 nodes in influence spread speed.
- Designed an attributed multiplex diffusion network named OMDM to address the propagation graph inference and propagation probability estimation of influence diffusion network, surpassing heterogeneous model HGT 8% in the AUC.

Research on the key technology of object detection and action recognition Jan 2023 - Jul 2023

- Designed a multi-scale Faster-RCNN with FPN for robust QR code recognition under occlusion and distortion, achieving 81% mAP on QR datasets, outperforming ResNet50 by 3% through feature pyramid fusion.
- Proposed attention-enhanced C3D, TSN and LRCN frameworks for action recognition. Combined channel, spatial and temporal attention (SE, CBAM, Non-local module) to prioritize critical motion features, improving the HMDB51 dataset 1.8% accuracy performance.

ACADEMIC PAPER

- Huang, F., & Wang, W. (2025). Diffusion-augmented Graph Contrastive Learning for Collaborative Filter. *arXiv preprint arXiv*:2503.16290.
- Huang, F., Zhao, S., Duan, M., Lou, Z., Chen, Y., Xia, X., & Wang, W.* (2025). Influence maximization in open source software community based on collaboration network. *Applied Intelligence*. (Manuscript submitted.)

COMPETITION EXPERIENCE

China Undergraduate Mathematical Modeling Contest

Optimization of Ethanol Coupling for C4 Olefins Production via Statistical and Machine Learning Models. Apr 2020 - Sep 2022

- Led team to decompose complex chemical processes into 3 sub-problems and establish mathematical model
- Designed a multi-scale regression framework integrating Arrhenius equation to address temperature's exponential impact on reaction rates and modify the regression function equation, providing data insight and analysis.
- Implemented linear programming to optimize catalyst combinations, achieving 46.98% C4 olefin yield (vs. benchmark 44.73%) under 400°C. Combined Monte Carlo method to solve the optimal solution.

AWARDS

China Undergraduate Mathematical Modeling Contest (First Prize) (Top 0.168%) Nov 2021
China Undergraduate Mathematical Contest (Third Prize) Dec 2020
Blue Bridge Cup National Software and Information Technology Talent Competition (Shanghai)(Third Prize) May 2022
Robocom Robot Developer Contest, CAIP Programming Design Track (Shanghai) (Third Prize) Aug 2022
Shanghai Computer Application Ability Competition (Third Prize) May 2022
Academician Innovation Class Scholarship (First Prize) (Top 8%) ; University of Shanghai for Science and Technology Dec 2021
Scholarship Excellence Student Scholarship (Second Prize) ; University of Shanghai for Science and Technology Oct 2021

ADDITIONAL INFORMATION

- Skills: C/C++, Python, Pytorch, Pytorch-geometric,SQL,Matlab
- Languages: Chinese (native) , English (fluent)