CHANG GUO Looking for PhD opportunities

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EDUCATION

Shanghai University, Department of Computer Engineering and Science   Sep.2021 – Jun.2024(Expected)

Master of Engineering, Major: Science in Computer Science, GPA: 3.6/4.0   Shanghai, China

- Main Course: Introduction to Computability(95), Pattern Recognition(87), Data Mining and Knowledge Discovery(86), Machine Learning and Data Analysis(84), etc

Shanghai University, QianWeiChang College   Sep.2017 – Jun.2021

Bachelor of Engineering, Major: Materials Design Science and Engineering, GPA: 3.61/4.0   Shanghai, China

- Main Course: Fundamentals of Materials Science(90), Quantum Mechanics(93), Material Data Mining(91), Numerical Calculation Methods(94), Python Calculations(92), etc

University of Cambridge, Corpus Christi College   Jul.2019 – Aug.2019

Summer program of Computer Science with Artificial Intelligence   Cambridge, U.K.

PUBLICATIONS

- **Guo C**, Li W, Wang J, et al. "Heterogeneous network influence maximization algorithm based on multi-scale propagation strength and repulsive force of propagation field." *Knowledge-Based Systems* (2024): 111580. (Q1, IF:8.8) 10.1016/j.knosys.2024.111580

- **Guo C**, Li W, Liu F, et al. "Influence maximization algorithm based on group trust and local topology structure." *Neurocomputing* (2023): 126936. (Q2, IF:6) 10.1016/j.neucom.2023.126936

- Li W, **Guo C**, Liu Y, et al. "Rumor source localization in social networks based on infection potential energy." *Information Sciences* 634 (2023): 172-188. (Q1, IF:8.1)10.1016/j.ins.2023.03.098

- Li W, **Guo C**, Deng Z, et al. "Coevolution modeling of group behavior and opinion based on public opinion perception." *Knowledge-Based Systems* 270 (2023): 110547. (Q1, IF:8.8) 10.1016/j.knosys.2023.110547

RESEARCH EXPERIENCE

Influence maximization in heterogeneous information networks   Nov.2022 – Apr.2024(Expected)

Master thesis, Advisor:Prof. Weimin Li

- Background: Existing studies do not take full advantage of the structural information of heterogeneous networks to maximize influence.
- Constructed a heterogeneous network influence maximization algorithm based on the multi-scale propagation strength and repulsive force of propagation field and implemented in code leveraging Python.
- Compared our method with baseline methods and visualized the empirical results.
- Obtained larger range of propagation and reduced the running time.

Influence maximization based on internal network structure information   Oct.2022 – Oct.2023

Advisor:Prof. Weimin Li

- Background: Utilized the influence of internal network structure information on information propagation to design an influence maximization algorithm based on group trust and local topology structure.
- Devised the influence propagation algorithm based on local topological structure in the group and implemented in code.
- Analyzed the characteristics of data sets and visualized the empirical results.
- Attained an enhancement in both effectiveness and efficiency.

Coevolution modeling of group behavior and opinion based on public opinion perception   Aug.2022 – Apr.2023

Advisor:Prof. Weimin Li

- Background: Researched the coevolution of group behaviors and opinions in uncertain environments.
- Drafted the formulas of quantify public opinion perception and assessed the experimental parameters.
- Collaborated on the coevolutionary model of group behavior and opinion based on perception of public opinion leveraging Python.
- Confirmed the rationality and effectiveness of our algorithm through empirical evidence.

Rumor source localization in social networks based on infection potential energy   May.2022 – Jan.2023

Advisor:Prof. Weimin Li

- Background: Considered that current single source localization research neglects the direction of infected nodes and fails to fully utilize diffusion information.
- Collated the completeness and consistency of data.
- Collaborated on network reconstruction and pruning methods and visualized the results leveraging Python.
- Achieved more accurate localization results with our algorithm based on infection potential energy.

Research on Machine Learning Data Sampling Method Based on First Principle Computing Jan.2021 – Apr.2021
Bachelor thesis, Advisor:Prof. Yi Liu

- Background: Combined first principles calculation and machine learning technology to accelerate the optimal alloy composition design of nickel based single crystal high-temperature alloys.
- Modeled and calculated the substitution energy of alloys utilizing Linux, VASP, and VESTA.
- Compared the predictive effectiveness of three machine learning models, optimized the active learning sampling strategy based on Bayesian optimization iteratively leveraging Python.
- Accelerated the next step of material design calculations or experiments by 15 to 20 times.

SCIENTIFIC COMPETITIONS

National Post-Graduate Mathematical Contest in Modeling, National Second Prize Sep.2021

- Responsible for code implementation and modeling ideas.
- Completed the paper *Secondary Model for Air Quality Prediction Based on BP Neural Network*.

Contemporary Undergraduate Mathematical Contest in Modeling, Third Prize in Shanghai Division Sep.2019

- Group leader, responsible for problem-solving ideas, MATLAB modeling of the forces acting on the concentric drum and writing the report.
- Completed the report *Research on the Strategy of Concerted Efforts.*

WORK EXPERIENCE

FUJIFILM corporation Apr.2021 – Jul.2021
Database Development Intern Shanghai, China

- Task description: Established a database management system based on departmental requirements to achieve business data storage, query, and analysis.
- Responsibilities: Completed the development work of the database management system independently.
  1. Analyzed the department's requirements and wrote system development technical documents.
  2. Designed and implemented the system, conducted regular development progress reports and system testing work.
  3. Completed the database and form interface design, and designed the security and upgrade maintenance module.

HONORS & AWARDS

Youfu Network **Scholarship**, School of Computer Engineering and Science Dec.2023
National Scholarship, Ministry of Education of the People's Republic of China Sep.2023
First Class Academic Scholarship(2 times), Shanghai University Dec.2018 & Nov.2023
Second Class Academic Scholarship(2 times), Shanghai University Dec.2019 & Dec.2022
Outstanding Graduates, Shanghai University Jun.2021
Top Academic Scholarship, Shanghai University Dec.2020

SKILLS

- Languages: English(fluent, CET 4/CET 6), Chinese(native)
- Programming: Python, Visual Basic, SQL, Matlab, C++

HOBBIES & SOCIAL EXPERIENCE

- Running, Swimming, Cycling, Hiking, Mountain climbing
- Participated in the 5th Shanghai Easyrun Forest Off Road Half Marathon and the 2023 Suzhou Taihu Marathon(Half-Marathon group)
- Volunteered for the 3rd China International Import Expo, Shanghai Blood Center, The 15th Challenge Cup and so on