Xiaoming Xue

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Bio

Xiaoming Xue is currently a PhD student at City University of Hong Kong, under the supervision of Prof. Kay Chen Tan and Dr. Linqi Song. He received the B.S. degree in petroleum engineering and the M.Sc. degree in oil & gas field development engineering from the China University of Petroleum (East China), in 2017 and 2020, respectively, under the supervision of Prof. Kai Zhang, where he studied expensive optimization, transfer optimization, and their practical applications in the field of petroleum engineering. His current research focus is on the theoretical analysis and algorithm design of sequential transfer optimization, as well as its practical applications.

Education

China University of Petroleum (East China)   **Qingdao, China**
B.S. in Petroleum Engineering   *Sep 2013 - Jun 2017*
- **GPA:** 3.51/4.0

China University of Petroleum (East China)   **Qingdao, China**
M.Sc. in Oil and Gas Field Development Engineering   *Sep 2017 - Jun 2020*
- **Supervisor:** Prof. Kai Zhang

City University of Hong Kong   **Hong Kong SAR, China**
Ph.D. Candidate in Computer Science   *Sep 2020 - Present*
- **Supervisors:** Prof. Kay Chen Tan, Prof. Linqi Song

Selected Publications

1. "Affine Transformation-Enhanced Multifactorial Optimization for Heterogeneous Problems" [Highly Cited]
   Xiaoming Xue, K. Zhang, K. C. Tan, L. Feng, J. Wang, G. Chen, X. Zhao, L. Zhang, J. Yao
   IEEE Transactions on Cybernetics (TCYB), 2020.

2. "Evolutionary Sequential Transfer Optimization for Objective-Heterogeneous Problems"
   Xiaoming Xue, C. Yang, Y. Hu, K. Zhang, Y. M. Cheung, L. Song, K. C. Tan
   IEEE Transactions on Evolutionary Computation (TEVC), 2021.

3. "Solution Transfer in Evolutionary Optimization: An Empirical Study on Sequential Transfer"
   Xiaoming Xue, C. Yang, L. Feng, K. Zhang, L. Song, K. C. Tan
   IEEE Transactions on Evolutionary Computation (TEVC), 2023.

4. "A Topology-Based Single-Pool Decomposition Framework for Large-Scale Global Optimization"
   Xiaoming Xue, K. Zhang, R. Li, L. Zhang, C. Yao, J. Wang, J. Yao
   Applied Soft Computing (ASOC), 2020.

5. "Global and Local Search Experience-Based Evolutionary Sequential Transfer Optimization"
   C. Cao, K. Zhang*, Xiaoming Xue*, K. C. Tan, J. Wang, L. Zhang, P. Liu, and X. Yan
   IEEE Transactions on Evolutionary Computation (TEVC), 2024.

Other Publications

Manuscripts in Submission

1. "Surrogate-Assisted Search with Competitive Knowledge Transfer for Expensive Optimization"
   Xiaoming Xue, L. Feng, Y. Hu, K. Zhang, L. Song, K. C. Tan
   IEEE Transactions on Evolutionary Computation (TEVC), 2024.

2. "A Scalable Test Problem Generator for Sequential Transfer Optimization"
   Xiaoming Xue, C. Yang, L. Feng, K. Zhang, L. Song, K. C. Tan
   IEEE Transactions on Cybernetics (TCYB), 2024.

4. "Rank-Based Learning and Local Model Based Evolutionary Algorithm for High-Dimensional Expensive MOPs"
   G. Chen, J. J. Jiao, Xiaoming Xue, and Z. Wang
   IEEE Transactions on Systems, Man, and Cybernetics: Systems (TSMCA), 2024.

Journal Publications

1. "A Divide-And-Conquer Optimization Paradigm for Waterflooding Production Optimization"
   Xiaoming Xue, G. Chen, K. Zhang, L. Zhang, X. Zhao, L. Song, M. Wang, P. Wang
   Journal of Petroleum Science and Engineering (JPSE), 2022.

2. "Competitive Knowledge Transfer-Enhanced Surrogate-Assisted Search for Production Optimization"
C. Cao, Xiaoming Xue*, K. Zhang*, L. Song, L. Zhang, X. Yan, Y. Yang, J. Yao, W. Zhou, and C. Liu
SPE Journal (SPE J), 2024.

3. "Multifidelity Genetic Transfer: An Efficient Framework for Production Optimization" [Highly Cited]
F. Yin, Xiaoming Xue, C. Zhang, K. Zhang, J. Han, B. Liu, J. Wang, J. Yao
SPE Journal (SPE J), 2021.

4. "Global and Local Surrogate-Model-Assisted Differential Evolution for Waterflooding Production Optimization"
G. Chen, K. Zhang, L. Zhang, Xiaoming Xue, D. Ji, C. Yao, J. Yao, Y. Yang
SPE Journal (SPE J), 2020.

5. "Efficient Hierarchical Surrogate-Assisted Differential Evolution for High-Dimensional Expensive Optimization"
G. Chen, Y. Li, K. Zhang, Xiaoming Xue, J. Wang, Q. Luo, C. Yao, J. Yao
Information Sciences (INS), 2021.

6. "Surrogate-Reformulation-Assisted Multitasking Knowledge Transfer for Production Optimization"
C. Zhong, K. Zhang, Xiaoming Xue, J. Qi, L. Zhang, C. Yao, Y. Yang, J. Wang, J. Yao, W. Zhang
Journal of Petroleum Science and Engineering (JPSE), 2022.

7. "Data-Driven Evolutionary Algorithm for Oil Reservoir Well-Placement and Control Optimization"
G. Chen, X. Luo, J. J. Jiao, Xiaoming Xue
Fuel, 2022.

8. "Historical Window-Enhanced Transfer Gaussian Process for Production Optimization"
C. Zhong, K. Zhang, Xiaoming Xue, J. Qi, L. Zhang, X. Yan, H. Zhang, Y. Yang
SPE Journal (SPE J), 2022.

9. "Source Free Semi-Supervised Transfer Learning for Diagnosis of Mental Disorders on fMRI Scans"
Y. Hu, Z. Huang, R. Liu, Xiaoming Xue, X. Sun, L. Song, K. C. Tan
IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2023.

Conference Publications

1. "Multiobjective Sequential Transfer Optimization: Benchmark Problems and Preliminary Results"
Xiaoming Xue, L. Feng, C. Yang, S. Liu, L. Song, K. C. Tan
IEEE Congress on Evolutionary Computation (CEC), 2024.

2. "A Dual-Stage Pseudo-Labeling Method for the Diagnosis of Mental Disorder on MRI Scans"
Y. Hu, Z. Huang, R. Liu, Xiaoming Xue, L. Song, K. C. Tan
International Joint Conference on Neural Networks (IJCNN), 2022.

Honors and Awards

1. Contemporary Undergraduate Mathematical Contest in Modeling (CUMCM), First Prize (1.5%)	2016
2. Interdisciplinary Contest in Modeling (ICM), Meritorious Winner (18%)	2016
3. Outstanding Master's Thesis in Shandong Province (1.5%)	2021
4. Research Tuition Scholarship, Awarded by CityU	2021 & 2022
5. Outstanding Academic Performance Award for Research Degree Students, Awarded by CityU	2024

Academic Service

Journal Reviewer

- IEEE Transactions on Evolutionary Computation (TEVC)
- IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
- IEEE Transactions on Emerging Topics in Computational Intelligence (TETCI)
- Engineering Applications of Artificial Intelligence (EAAI)
- Cognitive Computation (COGN)

Conference Reviewer

- IEEE Congress on Evolutionary Computation (CEC)
- International Joint Conference on Neural Networks (IJCNN)