Zaixing Sun

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Research Interests

- **Computational Intelligence Algorithms**
- **Workflow Scheduling in Cloud Computing**
- Shop Scheduling
- Optimal Scheduling Theory and Method

Research Experience

➢ During my master's degree, I gained a thorough understanding of single machine, flow shop, job shop, open shop, flexible and other shop scheduling problems, and skillfully apply GA, FPA, SSA, EDA, Bayesian network and other optimization algorithms. Among them, the multi-objective optimization problem has also been deeply studied.

➢ My Ph.D. research focuses on the optimization algorithm design for resources and tasks in cloud computing.

Research Technique or Viewpoint

In the algorithm design of optimal scheduling problem, mining the structure and properties of the problem and exploring the deterministic conditions to avoid invalid search can achieve three purposes: (1) deterministically optimize the known scheduling solution; (2) guide the algorithm to search the high-quality solution region; (3) improve the search efficiency of the algorithm.

Education

2023.04-present   Visiting Student. Victoria University of Wellington, Computer Science.
Supervisors: Prof. Mengjie Zhang, A/Prof. Yi Mei, Dr. Fangfang Zhang

2020.03-present   Ph.D. Harbin Institute of Technology, Shenzhen, Computer Science and Technology.
Supervisors: Prof. Hejiao Huang, Dr. Chonglin Gu

2016.09-2019.07   M.Sc. Kunming University of Science and Technology, Control Engineering.
Supervisors: Prof. Bin Qian, Prof. Rong Hu

2012.09-2016.07   B.Sc. Luoyang Normal University, Electrical Engineering and Its Automation.

Representative Research Publications

✓ **Z. Sun**, H. Huang, Z. Li, C. Gu, R. Xie, and B. Qian, "Efficient, economical and energy-saving multi-workflow scheduling in hybrid cloud," *Expert Systems With Applications*, vol. 228, p. 120401, Oct. 2023.   (SCI, CCF C)

✓ **Z. Sun**, B. Zhang, C. Gu, R. Xie, B. Qian, and H. Huang, "ET2FA: A Hybrid Heuristic Algorithm for Deadline-Constrained Workflow Scheduling in Cloud," *IEEE Transactions on Services Computing,* vol. 16, no. 3, pp. 1807–1821, 2023.   (SCI, CCF A)

✓ **Z. Sun**, Z. Li, H. Huang, and C. Gu*, "An Energy-efficient Scheduling Method for Real-time Multi-workflow in Container Cloud," in *Proceedings of the 16th Annual International Conference on Combinatorial Optimization and Applications (COCOA'23)*, 2023, pp. 1-12.   (EI)

✓ **Z. Sun**, C. Gu, H. Huang, and H. Zhang, "T2FA: A Heuristic Algorithm for Deadline-Constrained Workflow Scheduling in Cloud with Multicore Resource," in *IEEE International Conference on Cloud Computing, CLOUD*, 2021, pp. 345–354.   (CCF C)

✓ H. Zhang, Y. Wu, and **Z. Sun**, "EHEFT-R: multi-objective task scheduling scheme in cloud computing," *Complex & Intelligent Systems*, 2021, doi: 10.1007/s40747-021-00479-7.   (SCI)

✓ 孙在省, 钱斌, 胡蓉, 张梓琪, 张长胜. 基于块结构性质的花粉算法求解可重入作业车间调度问题[J]. 机械工程学报, 2019, 55(16): 220-232.   (EI)

✓ **Z. Sun**, R. Hu, B. Qian, B. Liu, et al., "Salp swarm algorithm based on blocks on critical path for reentrant job shop scheduling problems," in *International Conference on Intelligent Computing*, 2018, pp. 638–648.   (EI)

Honor & Awards

⚥ 2017   3rd prize of the fourteenth China Postgraduate Mathematic Contest in Modeling

⚥ 2018   National scholarship for Postgraduates

Foreign Language Abilities

Excellent in reading and writing, well spoken and listening.