

Changchun Liu

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Department of Industrial Engineering at Tsinghua University

A PhD student, Dissertation Supervisor : Professor Zheng Li

QUALIFICATIONS AND HONORS

- | | |
|---|-------------------|
| ■ PhD, Department of Industrial Engineering, Tsinghua University | Sep.2013-now |
| ● National scholarship for PhD | Nov.2017 |
| ● “Academic nova” of Department of Industrial Engineering | Apr.2017 |
| ● National scholarship for PhD | Dec.2016 |
| ■ BS, Logistics management, Shandong university of finance and economics | Sep.2008-Jul.2012 |

PROJECT EXPERIENCE

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|---|-------------------|
| ■ Design of simulation system, Zhejiang Wanfeng Motorcycle co. LTD | Jul.2017-Aug.2017 |
| ● Complete the design and code for the validation of production schedule. This project aims to find the bottleneck in the job shop problem. | |
| ■ Factory design for Shanghai Mingchen Mosu | Feb.2017-Jun.2017 |
| ● Production line and Logistics design for bumper assembly line | |
| ■ Production system design, Shenyang SWAT | Jun.2016-Aug.2016 |
| ● Design and optimization of automobile exhaust manifold production system | |
| ■ National Natural Science Foundation of China (Grant No. 71472108) | Feb.2014-Dec.2015 |
| ● Research on the resource scheduling at ports under uncertainty | |
| ■ Algorithm development for Huawei Hisilicon | Feb.2014-Feb.2015 |
| ● Algorithm design for solving the problem of order adjustment in the case of asymmetric information between producers and suppliers in the supply chain; | |
| ● Algorithm design for solving the problem of task assignment and route planning of cargo picker in warehouse; | |
| ● Algorithm design for solving the production scheduling problem with resource allocation in Huawei's production. | |

REASERCH FIELDS

- **Robust optimization in container terminals**
 - Heuristics for robust yard allocation scheduling;
 - Behavior perception-based disruption models for BACAP;
 - Decision model for berth allocation under uncertainty considering service level;
 - Robust optimization model for berth allocation problem.
- **Scheduling considering learning effect**
 - Scheduling with job-splitting considering learning;
 - Parallel machine scheduling with job splitting and learning.

■ **Project Scheduling**

- Distributed scheduling algorithm design for project scheduling;
- Lagrangian relaxation-based heuristic for project scheduling;
- Column generation based distributed scheduling algorithm for project scheduling;
- Multi-agent based distributed scheduling method for project scheduling;
- Sample average approximation formulation and branch-and-cut for robust project scheduling.

SKILLS AND HOBBIES

- **Very strong mathematical modeling ability;**
- **Proficient in Java;**
- **Love football.**

PROFESSIONAL ACTIVITIES

- **European Journal of Operational Research, Reviewer**
- **International Journal of Production Research, Reviewer**
- **Computers & Industrial Engineering, Reviewer**

PUBLICATIONS

■ **Published papers**

- **Liu Changchun**, Xiang Xi, Zheng Li, Ma Jing, (2017). An integrated model for multi-resource constrained scheduling problem considering multi-product and resource-sharing. *International Journal of Production Research*, 1-21.
- **Liu Changchun**, Wang Chenjie, Zhang Zhi-hai, Zheng Li (2018). Scheduling with job-splitting considering learning and the vital-few law. *Computers & Operations Research*, 90, 264-274.
- **Liu Changchun**, Xiang Xi, Zheng Li, (2017). Two decision models for berth allocation problem under uncertainty considering service level. *Flexible Services and Manufacturing Journal*, 29(3):312-344.
- **Liu Changchun**, Wang Qiang, Xiang Xi, Zheng Li, (2018). Minimizing tardiness in hybrid two-stage batch scheduling problem in cyber-physical systems, *European Journal of Industrial Engineering*, 12(2), 276-306.
- **Liu Changchun**, Zheng Li, Zhang Canrong (2016). Behavior perception-based disruption models for berth allocation and quay crane assignment problems. *Computers & Industrial Engineering*, 97, 258-275.
- **Liu Changchun**, Zhang Canrong, Zheng Li (2017). A bi-objective model for robust yard allocation scheduling for outbound containers. *Engineering Optimization*, 49(1),113-135.
- **Liu Changchun**, Xiang Xi, Zhang Canrong, Zheng Li (2016). A Decision Model for Berth Allocation Under Uncertainty Considering Service Level Using an Adaptive Differential Evolution Algorithm. *Asia-Pacific Journal of Operational Research*, 33(6),615-627.
- Xiang Xi, **Liu Changchun**, Miao, Lixin.. (2017). A bi-objective robust model for berth allocation scheduling problem under uncertainty. *Transportation Research Part E: Logistics and Transportation Review*, 106, 294-319.
- Xiang Xi, **Liu Changchun**, Miao, Lixin. (2018). Storage assignment and order batching problem in Kiva mobile fulfillment system, *Engineering Optimization*, accepted.
- Wang Chenjie, **Liu Changchun**, Zhang Zhi-hai, Zheng Li (2016). Minimizing the total

completion time for parallel machine scheduling with job splitting and learning. *Computers & Industrial Engineering*, 97, 170-182.

- **Liu Changchun** (2017). Research on coordination mechanism and low-carbon technology strategy for agricultural product supply chain. *International Journal of Information Systems & Supply Chain Management*, 10(3),1-23.

■ **Papers under review or under working**

- **Liu Changchun**, Xiang Xi, Zheng Li. A column generation based algorithm for resource constraint project scheduling problem with a fractional shared resource. *Computers & Industrial Engineering*, under review.
- **Liu Changchun**, Xiang Xi, Zhang Canrong, Zheng Li. A column generation based distributed scheduling algorithm for multi-mode resource constrained project scheduling problem. *Computers & Industrial Engineering*, under review.
- **Liu Changchun**, Xiang Xi, Zheng Li. Value of information sharing in a multi-resource constrained project scheduling problem. *European Journal of Operational Research*, under review.
- **Liu Changchun**, Xiang Xi, Zheng Li. Multi-agent based distributed scheduling method for multi-mode resource constrained project scheduling problem. *Annals of Operations Research*, under review.
- Xiang Xi, **Liu Changchun**, Miao, Lixin. A new solution framework for discrete berth allocation and quay crane assignment problems. *Transportation Research Part E: Logistics and Transportation Review*, under review.
- Xiang Xi, **Liu Changchun**, Miao, Lixin. Reactive strategy for discrete berth allocation and quay crane assignment problems under uncertainty. *Computers & Industrial Engineering*, under review.
- **Liu Changchun**. A robust model for multi-mode resource constrained project scheduling problem considering confidence level. Working paper.