Lei LIU

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RESEARCH DISCIPLINE
Stochastic scheduling and project management, Risk measure, Markovian network analysis, Operations management

ACADEMIC EXPERIENCE

Marie Curie Research Fellow   Feb., 2020-Jan., 2023
- Horizon 2020 Framework Programme for Research and Innovation, European Union
- Industrial Collaborator: Ansaldo Energia S.p.A, Italy

EDUCATION

Ph.D. in Mechanical Engineering   Spring, 2023
- Management Engineering Sector
- Politecnico di Milano, Milano, Italy
- Advisor: Prof. Marcello Urgo
- Thesis: Risk-based scheduling in the re-manufacturing of turbine blades

M.S. in Logistics Engineering   July, 2017
- Tsinghua University, Beijing, China
- Advisor: Prof. Canrong Zhang
- Thesis: A branch and bound algorithm for the robust parallel machine scheduling with sequence dependent set-up time

Exchange student in Industrial Engineering   2015.09-2016.03
- National Tsinghua University, Hsinchu, TaiWan

B.S. in Information Management and System   July, 2013
- Northeast Forestry University, Harbin, China

AWARDS
Marie Curie Fellowship, 2020-2023
Finalist, **PMS Best Student Paper Award**, 2022
Finalist, **AITeM Young Researcher Award**, 2021

WORKING PAPER
Lei Liu, Walter Terkaj, Marcello Urgo. A review and classification of release and dispatching control policies in manufacturing systems.

Lei Liu, Marcello Urgo. Robust production scheduling for the re-manufacturing of turbine blades.

PUBLICATIONS
Lei Liu, Marcello Urgo. Robust scheduling in a two-machine re-entrant flow shop to minimise the value-at-risk of the makespan: a branch-and-bound and heuristic algorithms based on Markovian Activity Networks and phase-type distribution, *under review at Annals of Operations Research*

Lei Liu, Marcello Urgo. Risk-based robust production scheduling: a branch-and-bound approach for the stochastic two-machine ow shop scheduling problem to minimise the value-at-risk, *under review at International Journal of Production Research*

Lei Liu, Marcello Urgo, 2022. A robust scheduling framework for re-manufacturing activities of turbine blades, Applied Sciences, 12(6):3034.

Lei Liu, Marcello Urgo, 2022. Scheduling remanufacturing activities for the repair of turbine blades: an approximate branch and bound approach to minimize a risk measure. In Selected Topics in Manufacturing (pp. 41-59). Springer, Cham.

CONFERENCE TALKS	A branch and bound approach for stochastic 2-machine flow shop scheduling with rework

- 18th International Workshop on Project Management and Scheduling, Ghent, Belgium   2022
- Finalist, Best Student Award

Scheduling re-manufacturing activities for the repair of turbine blades: an approximate branch and bound approach to minimize a risk measure
- XV AITeM Conference (Italian Association of Manufacturing Technology), Milano, Italy   2022
- Finalist, Young Researcher Award

A branch-and-bound approach for the two-machine flow shop stochastic scheduling problem to minimize the value-at-risk
- 31st European Conference on Operational Research, Athens, Greece   2021

A branch and bound algorithm for the robust parallel machine scheduling with sequence dependent set-up time
- Cross-Strait Tsinghua University Doctoral Forum, Shenzhen,China   2017

TEACHING

Mentor, Smart Manufacturing Lab
- 2020-2021, 2021-2022

OTHER PROFESSIONAL EXPERIENCES

Algorithm Engineer   2018-2019
- ZheJiang Transportation Big Data Center, Hangzhou, China

Software Engineer   2017-2018
- Hundsun Technologies Inc. Hangzhou, China

Data Intern   2015.01
- KPMG, ShenZhen, China

MEMBERSHIPS

Student Member, EURO Working Group on Project Management and Scheduling (PMS)

Student Member, Italian Association for Manufacturing Technology (AITEM)

COMPUTER SKILLS

Languages: C++, Python, Java, Latex
Software and tools: Gurobi, Pyomo