Lei LIU

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RESEARCH DISCIPLINE

Stochastic Scheduling and Project Management, Risk Measure, Markovian Network Analysis, Operations Management, Industrial Engineering

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

- Industrial 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 Flow 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