

Curriculum Vitae

1. Introduction

Name	Ruiqi Chen 陈睿奇	M/F	Male
		Phone	86-18021285371
Date of Birth	12- Aug-1999	Email	Rui.IE@outlook.com
Nationality	Chinese	Homepage	ruiqi-chen.cn



2. Experience

Present	Research Assistant
	Advanced Planning and Scheduling (APS) Lab at Soochow University
Jul 2021	Supervisor: Prof. Hongbing Yang
Jun 2021	B.Eng. in Industrial Engineering
	Soochow University, China
Sep 2017	GPA: 3.6/4; Ranking: 5/72, top 7%

3. Research Interests

- Intelligent Manufacturing System
- Combinatorial Optimization
- Deep Reinforcement Learning
- Meta-heuristic Algorithm
- Operation Research

4. Publications

- [1] **R. Chen**, W. Li and H. Yang, "A Deep Reinforcement Learning Framework Based on an Attention Mechanism and Disjunctive Graph Embedding for the Job Shop Scheduling Problem," in *IEEE Transactions on Industrial Informatics*, doi: [10.1109/TII.2022.3167380](https://doi.org/10.1109/TII.2022.3167380). (SCI, **IF=11.648**)
- [2] **R. Chen**, W. Li, C. Wang and H. Yang, "An Interactive Operation Agent Scheduling Method for Job Shop Based on Deep Reinforcement Learning," in *Chinese Journal of Mechanical Engineering*. (Accepted, EI, IF= 2.964)

5. Research Projects

- [1] **DRL-based Advanced Planning and Scheduling System Design**
 - **Introduction:** This research aimed to design original scheduling algorithms to cope with the impact of dynamic events in production environments.
 - **Funding:** The National Natural Science Foundation of China under Grant 52075354
 - **My Position:** RA & Head of Undergraduate Group
 - **My Duty:** I was responsible for problem modelling, deep reinforcement learning algorithm design, simulation experiments and analysis of results. Furthermore, I summarized the research results and wrote two papers as the first author.
- [2] **Development of Production Scheduling Software for Small Businesses**
 - **Introduction:** This study investigated the production scheduling needs of small businesses that cannot afford and maintain a mainstream APS system. In addition, we released a small, fast, full-featured scheduling product—APS-Lite, which adopts

cloud computation and Microsoft Office Add-in approaches to simplify deployment and cut costs.

- **My Position:** Head of Research Group
- **My Duty:** I organized the market research, product design and business plan elaboration. I was also the developer of the GUI module of this software. Moreover, I held roadshows for funding.

[3] **Anti-fatigue Office Microclimate Control System**

- **Introduction:** This is a study in human factors engineering. We captured features such as facial images and heart rates, analyzed the body's fatigue level and intervened in it by regulating the microclimate.
- **My Duty:** I was the major contributor to ideas and responsible for the face recognition, fatigue level analysis, control strategy and GUI modules alone.

[4] **Lean Production Optimization of a Company's Engine Brake Production Line**

- **Introduction:** This is a field research. We have optimized a production line by eliminating waste from transport, motion, etc.
- **My Duty:** I was responsible for collecting data, making charts and writing reports.

6. Competitions

[1] **2019 Chinese College Students Intelligent Manufacturing Competition**

- **My Position:** Captain of Soochow University Team
- **Award:** Second Prize in Finals & First Prize in East China Division
- **Selection Criteria:** Experts scored the contestants' ability in product design, production line simulation, production systems integration and industrial big data mining. The top 20% of teams were awarded second prize in the final, and there were only three quotas for first prize in regional divisions.

[2] **The 6th China International College Students' 'Internet+' Innovation and Entrepreneurship Competition in 2020**

- **My Position:** CEO of the Startup
- **Award:** Third Prize in Soochow University & First Prize in School of Mechanical and Electrical Engineering
- **Selection Criteria:** The business incubator at Soochow University selected projects (only 3 projects in our school) according to their business plan and roadshow. The best projects won awards and also received funding and business mentoring from the incubator.

[3] **The 21st 'Challenge Cup' National College Students Science and Technology Competition in 2020**

- **My Position:** Team Leader
- **Award:** Second Prize & Third Prize in Soochow University
- **Selection Criteria:** The Science Association evaluates research projects based on their innovation, advancement and practicality.

[4] **The 15th Tsinghua University ‘NISSAN Cup’ Industrial Engineering Competition in 2020**

- **Award:** Third Prize
- **Selection Criteria:** Department of Industrial Engineering at Tsinghua University assesses the practice of industrial engineering as well as theoretical research according to their contributions.

[5] **The 2nd Sunon Smart Service Innovation Competition in 2019**

- **Award:** Third Prize
- **Selection Criteria:** Zhejiang University and Sunon Corp. evaluate the innovativeness and practicality of smart service designs. The company may purchase these designs.

7. Honors

[1] **Excellent Undergraduate Thesis in Soochow University, 2021**

- **Selection Criteria:** The quality and innovation of the thesis
Only one quota in our department

[2] **First Prize for Innovation and Entrepreneurship in Soochow University, 2019**

- **Selection Criteria:** The achievement in innovation and entrepreneurship
Only one first prize in our department

[3] **Second Prize for Studying Excellent in Soochow University, 2019**

- **Selection Criteria:** GPA

[4] **Outstanding Student Leader in School of Mechanical & Electrical Engineering, 2018**

- **Selection Criteria:** Outstanding contribution in student union

8. Leadership

- In May 2019, I was elected the vice chairman of the Publicity Center at the School of Mechanical & Electrical Engineering, Soochow University. I was in charge of the Graphic Arts and Photography Department and was responsible for reviewing.
- In October 2019, I was promoted to the leader of the undergraduate group in APS Lab. This five-person research team was dedicated to designing novel machine learning and heuristic algorithms for production scheduling.
- In 2019, I led a team of five members to participate in the Chinese College Students Intelligent Manufacturing Competition and achieved excellent results. Since then, I have been appointed as a coach to train the students who compete afterwards.
- In 2020, as CEO, I formed a team of nine members dedicated to providing production scheduling solutions for small businesses. This project won prizes in China International College Students' 'Internet+' Innovation and Entrepreneurship Competition.

9. Professional Skills

Robot	FANUC C-class Robot Engineer Certificate
Programming	Python, Java, C, C#, HTML, CSS, PLC Programming
Optimizer	Google OR-Tools, IBM ILOG CPLEX
Simulation	SIEMENS Tecnomatix Plant Simulation, AnyLogic
Module	TensorFlow, Open-CV, SciPy
Design	SolidWorks, LaTeX, Microsoft Office, Adobe PS PR AE
Platform	Software Development on Windows, Linux, Android, Docker
Algorithms	Deep Learning, Reinforcement Learning, Heuristic, Exact Algorithms

10. Languages

Chinese	English	German
Native Language	IELTS: 6.5	TestDaF: 9+U3