**工业互联网与协同制造学习指引资料清单**

# 产业背景知识学习

学习了解制造业的特点、现状与转型升级需求；学习了解智能制造、工业互联网、协同制造的基本内涵、理念。

1. 离散制造与流程制造、制造业现状与迫切需求
2. 智能制造产业发展规划
3. 工业互联网体系架构、工业互联网平台白皮书、工业大数据白皮书等
4. 网络化协同制造、云制造等

推荐阅读：《行业报告精选集》

# 协同制造文献资料学习

**文献检索关键词：**

英文：Collaborative Manufacturing、software-defined Manufacturing、Ubiquitous manufacturing system、Cloud-based manufacturing system、manufacturing Cloud、Service-oriented manufacturing system

中文关键词：协同制造、群智制造、制造&协同优化、软件定义制造系统、面向服务的制造系统、云制造等

检索文献库：CNKI（中文文献）、IEEE（英文文献）、ISI web of knowledge（SCI索引库）

**相关重要中文刊物：**

1. 自动化学报
2. 计算机集成制造系统
3. 中国科学 : 信息科学

**相关重要英文刊物：**

1. IEEE trans on industrial informatics
2. IEEE transactions on automation science and engineering
3. journal of intelligent manufacturing
4. journal of manufacturing system
5. computers & industrial engineering
6. international journal of computer integrated manufacturing
7. international journal of production economics
8. international journal of industrial engineering computations
9. production and operations management
10. international journal of production research
11. production planning & control
12. robotics and computer-integrated manufacturing
13. international journal of computer integrated manufacturing
14. international journal of advanced manufacturing technology
15. journal of computing and information science in engineering
16. assembly automation

可有选择参考《部分文献集》，自己检索新的相关文献

几篇代表性文献：

1. Minimizing Completion Time for Order Scheduling\_ Formulation and Heuristic Algorithm
2. Resource Service Composition and Its Optimal-Selection Based on Particle Swarm Optimization in Manufacturing Grid System
3. The Framework of a Cloud-based CNC System
4. An Ontology-Based Resource Reconfiguration Method for Manufacturing Cyber-Physical Systems
5. Designing Dynamic and Collaborative Automation and Robotics Software Systems
6. A Service-Oriented Programming Approach for Dynamic Distributed Manufacturing Systems
7. Ubiquitous manufacturing system based on Cloud A robotics application
8. 云制造一一面向服务的网络化制造新模式
9. 云制造调度问题研究综述\_周龙飞
10. 再论云制造\_李伯虎
11. 分布式自主协同制造\_一种智能车间运行新模式\_
12. 网络化制造环境下服务匹配与合成问题研究
13. 面向多任务的制造云服务组合
14. ……

# 组合优化问题与群智算法学习

**学习内容：**

最优化问题：连续优化问题、离散优化/组合优化问题

典型群智优化算法：遗传、粒子群、蚁群等 以及动态规划、模拟退火等

这方面的网上开放的学习资料、算法代码都比较多；相关书籍也比较多。大家多运行一些实例，学习理解算法原理与算法实现代码，自己尝试改进算法。

# 编程语言与仿真计算环境学习

Matlab、Python 算法实验编程语言：

Java（系统开发编程语言）

# 深度强化学习、图神经网络等进阶算法学习

组合优化问题求解新的方法：

深度强化学习（组合优化问题可演变为一个序列决策问题）

图神经网络（组合优化问题可演变为一个图的表示学习问题）

推荐学习书籍：

《深度强化学习》彭伟著

《深入浅出图神经网络》刘忠雨等著

# 行业报告精选集

《信息物理系统白皮书（2017）》

安筱鹏+工业互联网建设的四个基本问题

工业互联网平台白皮书（2017）

工业互联网平台白皮书（2019讨论稿）

工业互联网体系架构报告

工业互联网体系架构-工业互联网产业联盟

走向智能推荐：工业大数据技术与应用白皮书2.0

走向智能推荐：工业互联网APP发展白皮书+（2018）

走向智能推荐：工业智能白皮书（2019讨论稿）

走向智能推荐：中国智能制造发展战略思考201712

# 部分文献

1. 车间&产线协同调度优化

（北大侍卫乐媛教授团队今年论文）

1. A peak-over-threshold search method for global optimization.pdf
2. A Sequential Budget Allocation Framework for Simulation Optimization.pdf
3. Customer order scheduling on batch processing machines with incompatible job families.pdf
4. Flow shop scheduling with a batch processor and limited buffer.pdf
5. Green transportation scheduling with pickup time and transport mode selections using a novel multi-objective memetic optimization approach (1).pdf
6. Integrated optimisation on flow shop production with cutting stock.pdf
7. Leyuan Shi.pdf
8. Minimization of total energy consumption in an m-machine flow shop with an exponential time-dependent learning effect.pdf
9. Minimizing Completion Time for Order Scheduling\_ Formulation and Heuristic Algorithm.pdf
10. Two-stage scheduling on batch and single machines with limited waiting time constraint.pdf
11. 互联网与大数据环境下高端装备制造工程管理理论与方法研究.pdf

其他：

1. A-bi-objective-model-for-integrated-scheduling-of-product\_2016\_Journal-of-Ma.pdf
2. An-evolutionary-game-approach-for-manufacturing-servi\_2019\_Computers-Indus.pdf
3. A-novel-multi-parent-order-crossover-in-genetic-algo \_2019\_Computers--Indust.pdf
4. Balancing and scheduling tasks in parallel assembly lines with sequence dependent setup times.pdf
5. Balancing-stochastic-parallel-assembly-lin\_2018\_Computers--Operations-Resea.pdf
6. Balancing-stochastic-two-sided-assembly-lines-A-chance\_2010\_European-Journa.pdf
7. Combinatorial-Benders-cuts-for-assembly-line-b\_2017\_European-Journal-of Oper.pdf
8. Data-driven-analytics-for-benchmarking-and-optim\_ 2019\_ International-Journal-.pdf
9. Drum buffer rope-based heuristic for multi-level rolling horizon planning in mixed model production.pdf
10. Enhancing-supply-chain-operations-with-extended-corporat \_2019 International-.pdf
11. Hybrid-flexibility-strategy-on-personnel-schedul 2019 Computers--Industrial.pdf
12. Improving effectiveness of parallel machine scheduling with earliness and tardiness costs\_ A case study.pdf
13. Mathematical-programming-and-solution-approaches-for-mini2019\_Computers-l.pdf
14. Metaheuristic-algorithms-for-balancing-robotic-assembly\_2019 Applied-Mathema.pdf
15. Prognostic-and-health-management-for-adaptive-manufact\_2019\_Computers-lndu.pdf
16. Scheduling Dual-Armed Cluster Tools for Concurrent Processing of Multiple Wafer Types With ldentical Job Flows.pdf
17. The order scheduling problem of product-service system with time windows.pdf
18. 协同制造IEEE paper
19. # [QWS Dataset] A reliability optimization method for collaborative manufacturing service network based on mining of important nodes.pdf
20. A Feature- based and Multi-Agents-based Collaborative Manufacturing Framework for Aircraft Structural Parts.pdf
21. A negotiation approach to support interoprability in a collaborative manufacturing environment.pdf
22. An Integrated Framework for Human-Robot Collaborative Assembly in Hybrid Manufacturing Cells.pdf
23. Autonomy in Collaborative Manufacturing Networks.pdf
24. Computational Experiment Research on the Equalization-Oriented Service Strategy in Collaborative Manufacturing.pdf
25. Distributed Software Development of a Cloud Solution for Collaborative Manufacturing Networks.pdf
26. Dynamic programming for services scheduling with start time constraints in distributed collaborative manufacturing systems.pdf
27. Enabling Innovative Concurrent Engineering and Collaborative Manufacturing in Extended Enterprises.pdf
28. Fragmented Knowledge in Collaborative Manufacturing Process Chains.pdf
29. Optimal Task Allocation for Human-Machine Collaborative Manufacturing Systems.pdf
30. Path-consistent safety in mixed human-robot collaborative manufacturing environments.pdf
31. Resource Service Composition and Its Optimal-Selection Based on Particle Swarm Optimization in Manufacturing Grid System.pdf
32. Safety in Human-Robot Collaborative Manufacturing Environments\_ Metrics and Control.pdf
33. The Construction of Collaborative Manufacturing Business Platform Based on Workflow Technology.pdf
34. The Workflow Selection Reasoning Framework of Collaborative Manufacturing System Based on SWRL.pdf
35. 云制造&面向服务的制造系统
36. Designing Dynamic and Collaborative Automation and Robotics Software Systems.pdf
37. A Service-Oriented Programming Approach for Dynamic Distributed Manufacturing Systems.pdf
38. An Ontology-Based Resource Reconfiguration Method for Manufacturing Cyber-Physical Systems.pdf
39. Development of a Hybrid Manufacturing Cloud.pdf
40. 000 Innovative control of assembly systems and lines .pdf
41. The Framework of a Cloud-based CNC System.pdf
42. Ubiquitous manufacturing Current practices, challenges, and opportunities.pdf
43. Ubiquitous manufacturing system based on Cloud A robotics application.pdf
44. 面向服务的开放式数控系统设计关键技术研究翟振坤.caj
45. 云制造&协同制造中文文献集
46. 多目标柔性作业车间调度模型及其进化算法研究\_王春.caj
47. 分布式自主协同制造\_ - 种智能车间运行新模式庄存波.pdf
48. 服务型制造的服务合成优化方法.pdf
49. 基于过程感知的底层制造资源智能化建模及其自适应协同优化方法研究张映锋:pdf
50. 基于面向服务架构的网络化协同制造资源重组优化研究韦韫caj
51. 基于社会化的协同智能制造系统研究张祖国caj
52. 基纡云知识库的数控机床智能控制器加工工艺规划方法研究叶瑛歆.caj
53. 金属结构件制造车间协同调度优化研究与应用孟荣华.caj
54. 面向多任务的制造云服务组合.pdf
55. 面向生活用纸企业敏捷制造的APS系统关键技术研究曾志强.caj
56. 面向突发事件的分布式制造资源协同调度李帅.pdf
57. 面向云制造的网络化协同技术服务研究丁军妹.caj
58. 面向智能制造的航空发动机协同设计与制造陈冰.pdf
59. 网络化协同制造环境下的混合访问控制模型姜洋pdf
60. 网络化制造环境下服务匹配与合成问题研究pdf
61. 网络制造环境下面向复杂零件的协同制造链研究吉锋:pdf
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