

Research Grants

A. Ministry of Science and Technology (MOST) Projects

1. **PI**, “Intelligent dynamic transportation strategy for automated material handling system in semiconductor manufacturing using deep learning and reinforcement learning”, 08/2023~07/2024, NSTC 112-2221-E-027-104
2. **Co-PI**, “Simulation and optimization for efficient and effective postearthquake medical rescue process (2/2)”, 08/2023~07/2024, NSTC 112-2625-M-007-001
3. **Co-PI**, “Simulation and optimization for efficient and effective postearthquake medical rescue process (1/2)”, 08/2022~07/2023, MOST 111-2625-M-007-001
4. **Co-PI**, “Simulation and optimization for efficient and effective postearthquake medical rescue process”, 08/2021~07/2022, MOST 110-2625-M-007-001
5. **PI**, “Optimize Geo-Distributed Cloud Resource Provisioning with Demand Uncertainty, Green Energy and Virtual Machine Trading from Cloud Brokers' Perspective”, 08/2020~07/2023, MOST109-2628-E-030-001-MY3 (**Outstanding Young Scholar Grant** 科技部優秀年輕學者研究計畫)
6. **PI**, “Medical Resource Planning and Scheduling for Emergency Department”, 08/2017~07/2020, MOST106-2221-E-030-009-MY3
7. **PI**, “Stochastic material procurement planning under uncertainties”, 08/2015~07/2017, MOST104-2221-E-030-011-MY2
8. **PI**, “Closed-loop sustainable supply chain network design with carbon trading under uncertainties (1)”, 08/2014~07/2015, MOST103-2221-E-030-022
9. **PI**, “Multi-objective Stochastic Capacity Planning in Multi-Stage Production Network under Risk-Aversion (1)”, 08/2013~07/2014, NSC102-2221-E-030-016
10. **Co-PI**, “Integrating Data Mining and Simulation Techniques to Develop a Decision Support System for Patient Tracking (1)”, 08/2012~10/2013, NSC101-2221-E-195-001
11. **PI**, “Multi-Objective Simulation Optimization for Stochastic Medical Resource Allocation in Emergency Department (1)”, 08/2012~10/2013, NSC101-2221-E-030-014
12. **PI**, “Stochastic Dynamic Capacity Planning for TFT-LCD manufacturing: Models and Solution Methods (1)”, 08/2011~10/2012, NSC100-2221-E-030 -007
13. **PI**, “Capacity planning for TFT-LCD production network (1)”, 11/2010~10/2011, NSC99-2218-E-030 -001

B. Industry-Academia Cooperation Projects

1. **PI**, “Early Deployment Decision of Optimal Resources for Emergency Medical Services” (緊急醫療服務最佳資源提前佈署決策), 07/2022~6/2023, National Science and Technology Center for Disaster Reduction (NCDR)
2. **PI**, “邊緣運算機制-電力消耗異常偵測技術與程式開發測試”, 06/2022~11/2022, Industrial Technology Research Institute(ITRI)

3. **PI**, “Simulation and Optimization for Mass Casualty Incident in Metropolitan Area” (都會區大量傷患處置模擬分析與最佳決策), 03/2022~10/2022, National Science and Technology Center for Disaster Reduction (NCDR)
4. **PI**, “先進排程系統設計與開發”, 02/2022~01/2023, Pronology Service (研騰科技)
5. **PI**, “Optimal medical resource allocation to combat COVID-19” (透過最佳醫療資源配置決策對抗 COVID-19 大流行), 01/2022~12/2022, Mackey Memorial Hospital
6. **Co-PI**, “Development of Smart Recommendation System for Grinding Wheel Spec” (智慧型砂輪規格推薦系統研發), 10/2022~09/2023, KINIK
7. **Co-PI**, “Order Fulfillment Module Maintenance II” (訂單履行模組維護 II), 09/2022~04/2023, Richtek Technology
8. **Co-PI**, “Maintenance of Conversion Module for Long and Short Material Codes” (長短型料號轉換模組維護精進), 09/2022~04/2023, Richtek Technology
9. **Co-PI**, “Development of Conversion Module for Long and Short Material Codes” (長短型料號轉換模組開發), 04/2022~08/2023, Richtek Technology
10. **Co-PI**, “Increase Prediction Model Accuracy of Defective Rate at Customer Sites to Increase Customer Satisfaction” (客端不良率預測), 05/2022~04/2023, AUO
11. **Co-PI**, “Analysis of Production Planning Process and Evaluation of Future Software System Requirements” (生產規劃流程現況分析與未來軟體需求評估), 09/2021~08/2022, Richtek Technology
12. **Co-PI**, “Demand Fulfillment Module Optimization” (訂單履行模組優化), 09/2021~08/2022, Richtek Technology
13. **Co-PI**, “Demand Fulfillment Module Maintenance” (訂單履行模組維護), 08/2021~07/2022, Richtek Technology
14. **Co-PI**, “SMT of Smart Manufacturing” (SMT 智慧製造), 06/2021~05/2022, Kinpo Electronics
15. **Co-PI**, “KPI Analysis for Smart Manufacturing” (智慧製造績效指標架構分析), 06/2021~05/2022, Kinpo Electronics
16. **PI**, “Simulation and Optimization for Mass Casualty Incident ” (大量傷患處置模擬分析與最佳決策), 03/2021~10/2021, National Science and Technology Center for Disaster Reduction (NCDR)
17. **PI**, “專業精密零組件精實管理診斷服務計畫”, 04/2021~10/2021, Industrial Technology Research Institute(ITRI)
18. **Co-PI**, “Aging Analysis of Train Line Polymer Insulator and Plan and Investigation of Train Line Pollution Areas” (電車線聚合礙子老化分析暨全線汙染區調查與規劃), 09/2020~08/2022, Taiwan High Speed Rail (THRS)
19. **Co-PI**, “Study of Optimization and Automation Application for Domestic Registered Small Package Picking Process” (國內掛號小包分揀流程優化與善用自動化設備研究), 08/2020~11/2020, Post Office

20. **Co-PI**, “Demand Fulfillment Module Development” (訂單履行模組開發), 07/2020~04/2021, Richtek Technology
21. **PI**, “最佳車輛數模擬與求解驗證”, 08/2020~11/2020, Industrial Technology Research Institute(ITRI)
22. **PI**, “爭鮮門市與中央廚房智慧物聯網創新服務計畫”, 08/2020~05/2021, Sushi Express Company
23. **Co-PI**, “Order Lead Time Analysis” (訂單生產前置時間分析), 03/2020~06/2020, Richtek Technology
24. **Co-PI**, “Survey and Analysis of AGVS” (無人搬運車(AGV)系統文獻探討與分析), 03/2020~06/2020, Industrial Technology Research Institute(ITRI)
25. **Co-PI**, “Smart Predictive Maintenance” (智慧預測保養), 01/2020~12/2020, Cal-Comp Automation and Industrial 4.0 Service (CCAUI)
26. **Co-PI**, “Predicting Emergency Department Admissions by Machine Learning” (應用機器學習於急診住院預測), 01/2020~12/2020, Mackey Memorial Hospital
27. **PI**, “郵件處理作業流程精進及管理資訊蒐集研究”, 11/2019~02/2020, Post Office
28. **Co-PI**, “應用人工智慧於檢測脈絡膜與近視之關係”, 06/2019~11/2019, Fu Jen Catholic University Hospital
29. **Co-PI**, “工業能源管理節能技術-使用電氣資訊進行轉動設備預知保養系統軟體開發”, 05/2019~12/2019, Industrial Technology Research Institute(ITRI)
30. **Co-PI**, “機器學習為基礎之急診室住院需求預測與壅塞成因之研究”, 06/2019~05/2020, Mackey Memorial Hospital
31. **Co-PI**, “System Development for MoneySQ P2P Platform” (MoneySQ 線上借貸平台第二期開發計畫), 12/2018~11/2019, MoneySQ(香港商錢匯發展有限公司台灣分公司)
32. **Co-PI**, “Prediction of Patient Numbers for a Regional Emergency Medical Center Using Hybrid Artificial Intelligence” (應用混合式人工智慧模型於急診病患人數預測), 01/2019~12/2019, Taichung Tzu Chi Hospital
33. **Co-PI**, “Credit Risk and Pricing Evaluation for MoneySQ P2P Platform” (MoneySQ 線上借貸平台-風險與定價評估模組), 10/2017~09/2018, MoneySQ(香港商錢匯發展有限公司台灣分公司)
34. **PI**, “Advanced Planning and Scheduling in Semiconductor Assembly and Testing Industry”, 05/2018~08/2018, Siliconware Precision Industries (SPIL)
35. **Co-PI**, “Market Survey and Analysis of IoT Applications” (IoT 應用市場調查分析), 01/2018~12/2018, Chicony Power
36. **Co-PI**, “Lean Management to Improve the Scheduling of Intensity-Modulated Radiotherapy” (以精實管理改善強度調控放射治療排程), 01/2018~12/2018, Mackey Memorial Hospital
37. **Co-PI**, “Lean Management” (精實管理), 12/2017~11/2019, Chicony Power
38. **Co-PI**, “A Study of Operation Flow and Capacity Planning of Mail Processing Center in North Taiwan” (北臺灣郵件作業中心作業流程及產能規劃研究), 10/2017~02/2018, Post

Office

39. **Co-PI**, “Smart Healthcare and Elderly Care” (智慧醫療與熟齡照護), 06/2017~05/2018, Chicony Power
40. **Co-PI**, “Lean Management in Hospital” (改善強度調控放射治療流程之精實管理及創新模式), 01/2017~12/2017, Mackey Memorial Hospital
41. **Co-PI**, “急診病患行為與壅塞關聯之資料探勘與分析”, 09/2016~09/2018, Mackey Memorial Hospital
42. **PI**, “造紙業能源使用分析技術”, 03/2016~11/2016, Industrial Technology Research Institute(ITRI)
43. **Co-PI**, “Simulation Analysis of the Loading Efficiency of Moving Platform” (移動平台運載效率模擬分析), 02/2016~06/2016, Industrial Technology Research Institute(ITRI)
44. **Co-PI**, “Lean Management” (精實管理), 12/2015~11/2017, Chicony Power
45. **Co-PI**, “Simulation of Loaded Robot Scheduling” (運載機器人排程系統軟體模擬), 10/2015~12/2015, Industrial Technology Research Institute(ITRI)
46. **PI**, “SQL Server 與 HBase 資料整合之視覺化報表系統”, 09/2015~11/2015, Industrial Technology Research Institute(ITRI)
47. **Co-PI**, “Simulation of Transportation Management System” (運載管理系統模擬), 07/2015~08/2015, Industrial Technology Research Institute(ITRI)
48. **Co-PI**, “System Simulation of Dispatching for Multiple Vehicle System” (多車運載系統派工流程規劃與系統模擬), 06/2015~11/2015, Industrial Technology Research Institute(ITRI)
49. **Co-PI**, “工廠製程能源使用分析技術”, 04/2015~11/2015, Industrial Technology Research Institute(ITRI)
50. **Co-PI**, “Development of Traffic Control Code for AGV” (無人搬運車交通管理程式開發), 04/2015~07/2015, Industrial Technology Research Institute(ITRI)
51. **Co-PI**, “Lean Construction” (精實營建), 01/2015~12/2017, Lien Jade Group
52. **PI**, “An improvement and analysis of automatic transportation process” (自動化工作流程與搬運流程改善與分析), 09/2014~11/2014, Industrial Technology Research Institute(ITRI)
53. **Co-PI**, “Lean Management” (精實管理), 08/2014~08/2017, Lien Jade Group
54. **Co-PI**, “Manufacturing System Automation and Design of Experiments” (製造系統自動化及 PCBA 實驗設計), 02/2014~05/2014, Coretronic Company
55. **Co-PI**, “An advanced analysis of the industrial electricity consumption” (工業電力能源資料分析進階研究計畫), 04/2014~11/2014, Industrial Technology Research Institute(ITRI)
56. **PI**, “A Study on Manpower Competency of Production Management at Craft Industry” (工藝產業生產管理人才職能之研究), 10/2013~03/2014, Industrial Technology Research Institute(ITRI)
57. **Co-PI**, “Analysis and Integration of Lean Systems” (精實系統分析與整合), 08/2013~12/2013, Industrial Technology Research Institute(ITRI)
58. **Co-PI**, “Critical path analysis of block and overcrowding in emergency department: discrete

event simulation and real-time tracking system”, 01/2011~12/2011, Mackey Memorial Hospital