

# 洪 英 超

Ying-Chao Hung

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## CURRENT POSITION

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2022/8-present 台灣大學工業工程學研究所	教授	Taipei, Taiwan
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## PROFESSIONAL EXPERIENCE

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2023/8- 台灣大學工業工程學研究所	EMS Instructor	Taipei, Taiwan
2023/7-2023/8 Institute of Statistical Mathematics	訪問學者	Tokyo, Japan
2020/8-2022/7 政治大學統計學系	系主任	Taipei, Taiwan
2020/8-2022/7 中國統計學社	學術委員	Taipei, Taiwan
2019/12-2023/12 國際統計計算協會 (IASC-ARS)	亞洲地區理事	ISI, Netherlands
2019/1-2022/1 中華機率統計學會	理事	Tainan, Taiwan
2018/8-2019/1 台灣大學數學系	兼任教授	Taipei, Taiwan
2018/7-2018/8 Department of Membership Knowledge & Growth Microsoft Corporation	訪問學者	Redmond, WA, USA
2018/2-2018/2 Department of Statistics & Applied Probability National University of Singapore	客座教授	Singapore
2017/7-2017/8 Institute of Statistical Mathematics	約聘客座教授	Tokyo, Japan

2016/7-2016/8 Informatics Institute, University of Florida	約聘客座教授	Gainesville, FL, USA
2015/8-2015/8 Department of Culture & Information Science Doshisha University	客座教授	Kyoto, Japan
2015/7-2022/7 政治大學商學院	EMBA Instructor	Taipei, Taiwan
2015/2-2022/7 政治大學統計學系	教授	Taipei, Taiwan
2013/8-2014/7 中央大學統計研究所	兼任副教授	Jhongli, Taiwan
2012/8-2014/7 政治大學統計學系	教授	Taipei, Taiwan
2010/8-2015/1 政治大學統計學系	副教授	Taipei, Taiwan
2009/8-2010/7 政治大學 統計學系	助理教授	Taipei, Taiwan
2007/3-2007/6 台北醫學大學護理學院	兼任助理教授	Taipei, Taiwan
2002/8-2009/7 中央大學統計研究所	助理教授	Jhongli, Taiwan

## **EDUCATION**

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2002/8 統計學系	Ph.D. University of Michigan	Ann Arbor, MI, USA
1995/6 統計學系	M.B.A. 國立政治大學	Taipei, Taiwan
1993/6 數學系	B.S. 國立台灣大學	Taipei, Taiwan

## **RESEARCH INTERESTS**

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統計計算與模擬, 應用機率, 隨機控制與最佳化, 統計機器學習, 格蘭傑因果關係檢定, 資料科學應用

## RESEARCH PAPERS

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### Publications

- **\*Hung, Y.C.** (2024). A Review of Monte Carlo and Quasi-Monte Carlo Sampling Techniques. *WIREs Computational Statistics*, 16(1), e1637.
- Tseng, N.F.; **\*Hung, Y.C.**; Nakano, J. (2024). Granger Causality Tests Based on Reduced Variable Information. *Journal of Time Series Analysis*, 45(3), 444-462.
- **\*Hung, Y.C.**; Michailidis, G. (2022). A Novel Data-Driven Approach for Solving the Electric Vehicle Charging Station Location-Routing Problem. *IEEE Transactions on Intelligent Transportation Systems*, 23(12), 23858-23868 (IF = 9.551, SJR ranking in Engineering (Automotive Engineering, Mechanical Engineering): 6/102, 20/614)
- **\*Hung, Y.C.**; Lok, H.P.H.; Michailidis, G. (2022). Optimal Routing and Design of Electric Vehicle Charging Systems with Stochastic Demands: A Heavy Traffic Approximation Approach. *European Journal of Operational Research*, 299(2), 526-541 (IF = 6.363, SJR ranking in Engineering (Industrial and Manufacturing Engineering): 11/368)
- Tsai, P.; Yan, G.; Liu, C.; **Hung, Y.C.**; Kahler, D.; Park, J.Y.; Potter, N.; Li, J.; Lu, B. (2020). Tumor phase recognition using cone-beam computed tomography projections and external surrogate information. *Medical Physics*, 47(10), 5077-5089 (Editor's Choice, IF = 4.071, SJR ranking in Biochemistry, Genetics & Molecular Biology (Biophysics): 15/140).
- **\*Hung, Y.C.**; Michailidis, G.; Lok, H.P.H. (2020). Locating Infinite Discontinuities in Computer Experiments. *SIAM/ASA Journal on Uncertainty Quantification*, 8(2), 717-747 (IF = 2.179, SJR ranking in Mathematics (Discrete Mathematics & Combinatorics): 10/93).
- **\*Hung, Y.C.**; Michailidis, G. Modeling and Optimization of Time-of-Use Electricity Pricing Systems. (2019). *IEEE Transactions on Smart Grid*, 10(4), 4116-4127 (IF = 8.267, SJR ranking in Computer Science (miscellaneous): 1/310 (2021), 1/460 (2020), 4/496 (2019)).
- Li, Y.F.; Lu, L.H.; **\*Hung, Y.C.** (2019). A New Clustering Algorithm Based on Graph Connectivity. In: Arai K., Kapoor S., Bhatia R. (eds) *Intelligent Computing. SAI 2018. Advances in Intelligent Systems and Computing*, Vol 858, pp. 442-454, Springer, Cham.
- **\*Hung, Y.C.**; Chen, W.C. (2017). Simulation of Some Multivariate Distributions Related to the Dirichlet Distribution with Application to Monte Carlo Simulations, *Communications in Statistics - Simulation and Computation*, 46(6), 4281-4296.

- **\*Hung, Y.C.**; Chen, R.W.; Balakrishnan, N. (2016). On the Correlation Structure of Exponential Order Statistics and Some Extensions. *Mathematical Methods of Statistics*, 25(3), pp. 196-206.
- **\*Hung, Y.C.**; Michailidis, G. (2015). Optimal Routing for Electric Vehicle Service Systems. *European Journal of Operational Research*, 247(2), pp. 515-524 (IF = 2.679, SJR ranking in Computer Science (miscellaneous): 6/600)
- **\*Hung, Y.C.**; Tseng, N.F.; Balakrishnan, N. (2014). Trimmed Granger Causality Between Two Groups of Time Series. *Electronic Journal of Statistics*, 8(2), pp. 1940-1972 (5yr IF = 1.325, SJR ranking in Decision Sciences (Statistics, Probability and Uncertainty): 18/131)
- **\*Hung, Y.C.**; Michailidis, G.; Chuang, S.C. (2014). Estimation and Monitoring of Traffic Intensities with Application to Control of Stochastic Systems. *Applied Stochastic Models in Business and Industry*, 30(2), pp. 200-217 (5yr IF = 0.811)
- Cheng, C.W.; **\*Hung, Y.C.**; Balakrishnan, N. (2014). Generating Beta Random Numbers and Dirichlet Random Vectors in R: The Package rBeta2009. *Computational Statistics & Data Analysis*, 71, pp. 1011-1020 (5yr IF = 1.510, SJR ranking in Computer Science (Computational Theory and Mathematics): 16/495)
- **\*Hung, Y.C.**; Chang, H.H. New Tests of Granger Causality for Two Groups of Time Series. *Proceedings of the 3<sup>rd</sup> International Symposium on Business and Social Sciences*, Sapporo, Hokkaido, Japan, July 22-24, 2014, pp. 500-511.
- Chen, R.B.; **Hung, Y.C.**; Wang, W.C.; Yen, S.W. (2013). Contour Estimation via Two Fidelity Computer Simulators Under Limited Resources. *Computational Statistics*, 28(4), pp. 1813-1834 (5yr IF = 0.667)
- **\*Hung, Y.C.**; Tseng, N.F. (2013). Extracting Informative Variables in the Validation of Two-group Causal Relationship. *Computational Statistics*, 28(3), pp. 1151-1167 (5yr IF = 0.667)
- Chuang, S.C.; **Hung, Y.C.**; Tsai, W.C.; Yang, S.F. (2013). A Framework for Nonparametric Profile Monitoring. *Computers and Industrial Engineering*, 64, pp. 482-491 (5yr IF = 2.382, SJR in Computer Science (miscellaneous): 16/499)
- **\*Hung, Y.C.** (2012). Wald's Identity for the Fair Coin-tossing Games and Some Applications. *The Open Statistics and Probability Journal*, 4, pp. 1-4.
- Yang, S.F.; Cheng, T.C.; **Hung, Y.C.**; Cheng, S.W. (2012). A New Chart for Monitoring Service Process Mean. *Quality and Reliability Engineering International*, 28(4), pp. 377-386 (5yr IF = 0.992, SJR ranking in Engineering (Safety, Risk, Reliability & Quality): 33/430)

- Chiang, C.R.; **Hung, Y.C.**; Chen, C.M.; Shieh, G.S. (2012). Inferring Genetic Interactions via A Data-driven Second Order Model. *Frontiers in Statistical Genetics and Methodology*, 3, Article 71.
- **\*Hung, Y.C.**; Michailidis, G. (2012). Stability and Control of Acyclic Stochastic Processing Networks with Shared Resources. *IEEE Transactions on Automatic Control*, 57(2), pp. 489-494 (IF = 2.718, SJR ranking in Engineering (Control and Systems Engineering): 1/838)
- **\*Hung, Y.C.**; Tsai, W.C.; Yang, S.F.; Chuang, S.C.; Tseng, Y.K. (2012). Nonparametric Profile Monitoring in Multi-dimensional Data Spaces. *Journal of Process Control*, 22(2), pp. 397-403 (5yr IF = 2.285, SJR ranking in Engineering (Control and Systems Engineering): 16/838)
- **\*Hung, Y.C.** (2012). Optimal Bayesian Strategies for the Infinite-armed Bernoulli Bandit. *Journal of Statistical Planning and Inference*, 142(1), pp. 86-94 (5yr IF = 0.612)
- **\*Hung, Y.C.**; Balakrishnan, N.; Cheng, C. W. (2011). Evaluation of Algorithms for Generating Dirichlet Random Vectors. *Journal of Statistical Computation and Simulation*, 81(4), pp. 445-459 (5yr IF = 0.573)
- **\*Hung, Y.C.** “A Dynamic Scheduling Policy for Switched Processing Systems”. *Proceedings of International Symposium on Innovative Management, Information & Production (IMIP)*, Otaru, Japan, October 8-10, 2011, pp. 133-139.
- Tseng, N.F.; **\*Hung, Y.C.** “A New Graphical Presentation of Granger Causal Structure for Multivariate Time Series”. *Proceedings of International Symposium on Innovative Management, Information & Production (IMIP)*, Otaru, Japan, October 8-10, 2011, pp. 128-132.
- **\*Yang, S.F.**; **Hung, Y.C.**; Cheng, T.C.; Tsai, W.C.; Cheng, S.W. “A New Control Chart for Monitoring Service Process with Unknown Distributions”. *Proceedings of the 8th IEEE International Conference on Service Systems and Service Management (ICSSSM)*, Nankai University, Tianjin, China, June 25-27, 2011, pp. 1-5.
- Chuang, S. C.; **\*Hung, Y.C.** (2010). Uniform Design over General Input Domains with Applications to Target Region Estimation in Computer Experiments. *Computational Statistics & Data Analysis*, 54(1), pp. 219-232 (5yr IF = 1.363, SJR ranking in Computer Science (Computational Theory and Mathematics): 20/823)
- **\*Hung, Y.C.**; Chen, R.W.; Zame, A.; Chen, M.R. (2010). A Note on the First Occurrence of Strings. *Electronic Journal of Combinatorics*, 17(1), #N5 (5yr IF = 0.636, SJR ranking in Mathematics (Theoretical Computer Science): 27/247)
- **\*Hung, Y.C.** “An Optimal Bayesian Strategy for Bandit Problems with

Applications to Data Routing Networks”. *Proceedings of the 7th International Symposium on Management Engineering (ISME)*, City of Kitakyushu, Japan, August 26-28, 2010, pp. 116-120.

- **\*Hung, Y.C.**; Balakrishnan, N.; Lin, Y.T. (2009). Evaluation of Beta Generation Algorithms. *Communications in Statistics –Simulation and Computation*, 38(4), pp. 750-770 (5yr IF = 0.394)
- **\*Hung, Y.C.** (2009). A Note on Randomized Shepp's Urn Scheme. *Discrete Mathematics*, 309 (6), pp. 1749-1759 (5yr IF = 0.680, SJR ranking in Mathematics (Theoretical Computer Science): [37/190](#))
- **\*Hung, Y.C.**; Chang, C.C. (2008). Dynamic Scheduling for Switched Processing Systems with Substantial Service-mode Switching Times. *Queueing Systems: Theory and Applications*, 60, pp. 87-109 (5yr IF = 1.292, SJR ranking in Computer Science (Computational Theory and Mathematics): [12/347](#))
- **\*Hung, Y.C.**; Michailidis, G. (2008). Modeling, Scheduling, and Simulation of Switched Processing Systems. *ACM Transactions on Modeling and Computer Simulation*, 18(3), Article 12.
- **Hung, Y.C.**; \*Michailidis, G. “A Measurement Based Dynamic Policy for Switched Processing Systems”. *Proceedings of the IEEE International Conference on Communications*, Glasgow, Scotland, June 2007, pp. 301-306. **(The Best Paper Prize, Acceptance rate ~ 900/2600)**
- **Hung, Y.C.**; \*Michailidis, G. “Improving Quality of Service for Switched Processing Systems”. *Proceedings of 11th Intl. Workshop on Computer-Aided Modeling, Analysis and Design of Communication Links and Networks (IEEE CAMAD)*, Trento, Italy, June 2006, pp. 46-53.
- Shieh, G.S.; Jiang, Y.C.; **Hung, Y.C.**; Wang, T.F. “A Regression Approach to Reconstruct Gene Networks”. *Proceedings of Taipei Symposium on Statistical Genomics*, Taipei, Taiwan, December 2004, pp. 357-370.
- **\*Hung, Y. C.**, Michailidis, G., Bingham, D. R.. “Developing Efficient Simulation Methodology for Complex Queueing Networks”. *Proceedings of the Winter Simulation Conference*, New Orleans, December 2003, pp. 152-159.
- **Hung, Y.C.**; \*Michailidis, G. “On the Design of Efficient Simulations for Complex Queueing Networks”. *Proceedings of the 36th Conference on Information Sciences and Systems (CISS)*, Princeton University, March 2002, pp. 104-108.

### Papers in Review/Preparation

- **\*Wu, W.B.**; **Hung, Y.C.** High-dimensional Granger Causality Tests Based on Nopivotal Statistics, working paper.

- Chang, I. W.; Chen, C.E.; **Hung, Y.C.**; Hsieh, C.H; Hsiao, S.F.; Chen, M.C.; Lin, C.H.; Shih, Y.C.; Wu, S.H.; Wang, T.H.; Liao, W.C.; Ma, H.; Perng, C.K. A Machine Learning Approach for Classifying the Burn Degree Based on Indocyanine Green Video Angiography, to be submitted to *Burns*.
- Yi, Z. A.; **Hung, Y.C.**; Michailidis, G. Enhanced Clustering Using Asymmetric Dissimilarity Matrices for Optimizing Routing and Location in EV Charging Systems, working paper.
- **Hung, Y.C.** Optimal Routing for EV Charging Systems with Time-varying Input Parameters, working paper.
- **Hung, Y.C.** Optimal Routing and Throughput Analysis for EV Charging Systems Under Range Anxiety Constraints, working paper.
- **Hung, Y.C.**; Michailidis, G. Data-Driven Strategies for Optimizing Operations in Public Bike Sharing Systems, working paper.
- **Hung, Y.C.** Optimal Pricing Strategies and Inventory Management for Perishable Goods, working paper.
- **Hung, Y.C.**; Li, Y.F.; Lu, L.H. Acceleration of Partitioning Hard Kernel Clustering Based on Spectral Analysis.
- **Hung, Y.C.**; Chen, R.W. Construction of Doubly Even Magic Squares with Applications to AI.

## MY LABORATORY

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**The Data Analytics and Optimization Laboratory** is dedicated to advancing the frontiers of data-driven decision-making and operational excellence. Our interdisciplinary team collaborates at the intersection of data science, optimization, and machine learning to solve complex real-world problems across diverse industries.

**Key Focuses:** Statistical Modeling and Computation, Stochastic Optimization, Machine Learning, Data Science Applications

## TEACHING

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- Linear Algebra
- Engineering Statistics
- Business Statistics
- Mathematical Statistics
- Applied Probability Models
- Stochastic Process
- Simulation Analysis
- Statistical Computing and Simulation
- Multivariate Analysis
- Statistical Machine Learning
- Time Series

- Statistical Methods and Stochastic Processing Networks
- Response Surface Methodology
- Advanced Research Methods
- Business Data Analytics and Management (EMBA)

## HONORS AND AWARDS

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- (2021) 學術研究獎 – 政治大學
- (2020) 科技部研究獎勵 – 科技部
- (2019) 科技部研究獎勵 – 科技部
- (2019) 教學優良獎 – 政治大學商學院
- (2018) 特殊優秀人才獎勵 – 科技部
- (2017) 特殊優秀人才獎勵 – 科技部
- (2017) 教學優良獎 – 政治大學商學院
- (2016) 學術研究獎 – 政治大學
- (2016) 教學特優獎 – 政治大學商學院
- (2016) 特殊優秀人才獎勵 – 科技部
- (2015) 特殊優秀人才獎勵 – 科技部
- (2015) 教學優良獎 – 政治大學商學院
- (2014) 特殊優秀人才獎勵 – 科技部
- (2014) 教學優良獎 – 政治大學商學院
- (2013) 特殊優秀人才獎勵 – 國家科學委員會
- (2012) 特殊優秀人才獎勵 – 國家科學委員會
- (2012) 教學特優獎 – 政治大學商學院
- (2010) 教學優良獎 – 政治大學商學院
- (2007) The Best Paper Prize - IEEE International Conference on  
Communications (Acceptance rate  $\approx$  900/2600)
- (2005) 教學優良獎 – 中央大學理學院
- (2003) 教學優良獎 – 中央大學理學院

## JOURNAL REFEREE

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- IEEE Transactions on Automatic Control
- IEEE Transactions on Smart Grid



- IEEE Transactions on Intelligent Transportation systems
- European Journal of Operational Research
- IIE/IISE Transactions
- Computers and Industrial Engineering
- Transportation Research Part D: Transport and Environment
- Transportmetrica A: Transport Science
- Queueing Systems: Theory and Applications
- Journal of Scheduling
- Journal of Process Control
- Journal of Cleaner Production
- International Journal of Energy Research
- Technometrics
- Computational Statistics and Data Analysis
- Journal of Statistical Planning and Inference
- Statistical Methodology
- Statistics and Probability Letters
- Journal of Applied Statistics
- Computational Statistics
- Journal of Statistical Computation and Simulation
- Communications in Statistics - Theory and Method
- Communications in Statistics - Simulation and Computation
- Applied Stochastic Models in Business and Industry
- Econometrics
- Quality Technology & Quantitative Management
- International Journal of Information and Management Sciences
- Journal of Data Science
- Journal of the Chinese Statistical Association

## **RESEARCH GRANT**

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- (2025) 電動車充電站之區位途程及容量分配等最佳化問題 (3/3) – 國科會
- (2024) 電動車充電站之區位途程及容量分配等最佳化問題 (2/3) – 國科會
- (2023) 電動車充電站之區位途程及容量分配等最佳化問題 (1/3) – 國科會
- (2022) 解決汽車服務系統之區位途程問題:最佳化和資料驅動方法 (2/2)  
- 科技部
- (2021) 解決汽車服務系統之區位途程問題:最佳化和資料驅動方法 (1/2)  
- 科技部

- (2020) 圖論分羣和相關之加速演算法(2/2) -科技部
- (2019) 圖論分羣和相關之加速演算法(1/2) -科技部
- (2018) 找出電腦實驗中產生無窮發散輸出之參數設定(2/2) -科技部
- (2017) 找出電腦實驗中產生無窮發散輸出之參數設定(1/2) -科技部
- (2016) 多變量時間序列格蘭傑因果關係結構之探索(2/2) - 科技部
- (2015) 多變量時間序列格蘭傑因果關係結構之探索(1/2) - 科技部
- (2014) 多面體均勻分配之產生及其在蒙地卡羅模擬之應用 - 科技部
- (2013) 產生迪氏分配之高效率演算法及應用 - 科技部
- (2012) 二群多變量時間數列間之簡化因果關係 - 科技部
- (2012) 血品供應滿意度調查問卷統計分析計畫 - 醫療財團法人血液基金會
- (2012) 捐血服務需求與滿意度調查資料分析計畫 - 醫療財團法人血液基金會
- (2011) 流量強度的測量與監控及其在隨機系統控制上之應用 - 科技部
- (2010) 吃角子老虎問題之最佳貝氏策略 - 科技部
- (2009) 凸面區域之均勻設計及其在電腦實驗上之應用 - 科技部
- (2008) 貝他分配演算法之評估 - 科技部
- (2007) 以測量為基準之交換處理系統動態策略 - 國科會
- (2006) 解決複雜網路最佳化問題之演算法設計 - 國科會
- (2005) 廣泛的 Shepp 甕問題之隨機性觀點 - 國科會
- (2004) 設計高效率之模擬複雜網路模型演算法 - 國科會
- (2003) 可資源共享之平行分散處理系統的分析與研究(2/2)-國科會
- (2002) 可資源共享之平行分散處理系統的分析與研究(1/2)-國科會

## GRANT PROPOSALS REVIEW

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- MST (科技部) Research Grants
- NSC (國科會) Research Grants

## ACADEMIC ASSOCIATION

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- Member of International Statistical Institute (ISI)
- 中華機率統計學會永久會員
- 中國工業工程學會永久會員