Ying-Chao Hung

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Institute of Industrial Engineering
National Taiwan University, Taipei 10617, Taiwan
Tel: 02-3366-9604

CURRENT POSITION

2022/8-present	Professor	Taipei, Taiwan
	Institute of Industrial Engineeering, National Taiwan University	

PROFESSIONAL EXPERIENCE

2023/8-	EMS Instructor	Taipei, Taiwan
	Institute of Industrial Engineeering, National Taiwan University	
2023/7-2023/8	Visiting Professor	Tokyo, Japan
	Institute of Statistical Mathematics	
2020/8-2022/7	Chair	Taipei, Taiwan
	Dept. of Statistics, National Chengchi University	
2020/8-2022/7	Member of Academic Committee	Taipei, Taiwan
	Chinese Statistical Association (Taiwan)	
2019/12-2023/12	Board of Directors	ISI, Netherlands
	International Association for Statistical Computing – Asian Regional Section (IASC-ARS)	
2019/1-2022/1	Board of Directors	Taiwan
	Chinese Institute of Probability and Statistics	
2018/8-2019/1	Adjunct Professor	Taipei, Taiwan
	Dept. of Mathematics, National Taiwan University	
2018/7-2018/8	Visiting Professor	Redmond, WA, USA
	Dept. of Membership Knowledge & Growth, Microsoft Corp.	
2018/2-2018/2	Visiting Professor	Singapore
	Dept. of Statistics & Appl. Probability, National University of Singapore	
2017/7-2017/8	Appointed Visiting Professor	Tokyo, Japan

Institute of Statistical Mathematics

2016/7-2016/8	Appointed Visiting Professor	Gainesville, FL, USA

Informatics Institute, University of Florida

2015/8-2015/8	Visiting Professor	Kyoto, Japan

Dept. of Culture & Information Science, Doshisha University

2015/7-2022/7	EMBA Instructor	Taipei, Taiwan

College of Commerce, National Chengchi University

2015/2-2022/7	Professor	Taipei, Taiwan

Dept. of Statistics, National Chengchi University

2013/8-2014/7	Adjunct Associate Professor	Jhongli, Taiwan

Graduate Inst. of Statistics, National Central University

2012/8-2014/7	Director of Consulting Center	Taipei, Taiwan

Dept. of Statistics, National Chengchi University

2010/8-2015/1	Associate Professor	Taipei, Taiwan

Dept. of Statistics, National Chengchi University

2009/8-2010/7	Assistant Professor	Taipei, Taiwan

Dept. of Statistics, National Chengchi University

2007/3-2007/6	Adjunct Assistant Professor	Taipei, Taiwan

School of Nursing, Taipei Medical University

2002/8-2009/7	Assistant Professor	Jhongli, Taiwan

Graduate Inst. of Statistics, National Central University

EDUCATION

2002/8	Ph.D.	Ann Arbor, MI, USA

Dept. of Statistics, University of Michigan

1995/6	M.B.A.	Taipei, Taiwan

Dept. of Statistics, National Chengchi University

1993/6	B.S.	Taipei, Taiwan

Dept. of Mathematics, National Taiwan University

RESEARCH INTERESTS

Computational Statistics and Simulation, Applied Probability, Stochastic Control and Optimization, Statistical Machine Learning, Granger Causality Test, Applications to Data Science

RESEARCH PAPERS

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 3ʳᵈ 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

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

- 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

- Academic Research Award (2021) - National Chegnchi University, Taiwan
- Research Incentive Grant (2020) - Ministry of Science and Techonology, Taiwan
- Research Incentive Grant (2019) - Ministry of Science and Techonology, Taiwan
- Excellence Teaching Award (2019) - College of Commerce, National Chengchi University, Taiwan
- Special Outstanding Talent Award (2018) - Ministry of Science and Techonology, Taiwan
- Special Outstanding Talent Award (2017) - Ministry of Science and Techonology, Taiwan
- Excellence Teaching Award (2017) - College of Commerce, National Chengchi University, Taiwan

- Academic Research Award (2016) - National Chegnchi University, Taiwan
- Special Outstanding Talent Award (2016) - Ministry of Science and Techonology, Taiwan
- Outstanding Teaching Award (2016) - College of Commerce, National Chengchi University, Taiwan
- Special Outstanding Talent Award (2015) - Ministry of Science and Techonology, Taiwan
- Excellence Teaching Award (2015) - College of Commerce, National Chengchi University, Taiwan
- Special Outstanding Talent Award (2014) - Ministry of Science and Techonology, Taiwan
- Excellence Teaching Award (2014) - College of Commerce, National Chengchi University, Taiwan
- Special Outstanding Talent Award (2013) - National Science Council, Taiwan
- Special Outstanding Talent Award (2012) - National Science Council, Taiwan
- Outstanding Teaching Award (2012) - College of Commerce, National Chengchi University, Taiwan
- Excellence Teaching Award (2010) - College of Commerce, National Chengchi University, Taiwan
- The Best Paper Prize (2007) – IEEE International Conference on Communications (Acceptance rate ≈ 900/2600)
- Excellence Teaching Award (2005) - College of Science, National Central University, Taiwan
- Excellence Teaching Award (2003) - College of Science, National Central University, Taiwan

JOURNAL REFEREE

- 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

- (2025) Optimization Problems for EV Charging Station Location, Routing and Capacity Allocation (3/3) -NSC
- (2024) Optimization Problems for EV Charging Station Location, Routing and Capacity Allocation (2/3) -NSC
- (2023) Optimization Problems for EV Charging Station Location, Routing and Capacity Allocation (1/3) -NSC
- (2022) Soving the Location-Routing Problem for Vehicle Service Systems: Optimization and Data-Driven Approaches (2/2) -MST
- (2021) Soving the Location-Routing Problem for Vehicle Service Systems: Optimization and Data-Driven Approaches (1/2) -MST
- (2020) Graph Clustering and Related Acceleration Algorithms (2/2) -MST
- (2019) Graph Clustering and Related Acceleration Algorithms (1/2) -MST
- (2018) Locating Infinite Outputs in Computer Experiments (2/2) -MST
- (2017) Locating Infinite Outputs in Computer Experiments (1/2) -MST
- (2016) Exploration of Granger Causal Structure for Multivariate Time Series (2/2) - MST

- (2015) Exploration of Granger Causal Structure for Multivariate Time Series (1/2) - MST
- (2014) Generation of the uniform distribution over a polyhedron with application to Monte Carlo simulations - NSC
- (2013) An Efficient Algorithm for Generating Dirichlet Random Vectors and Some Applications - NSC
- (2012) A Trimmed Causal Relationship Between Two Groups of Multivariate Time Series Data - NSC
- (2012) Statistical Analysis on the Survey of Blood Supply Satisfaction – Taiwan Blood Service Fundation
- (2012) Statistical Analysis on the Survey of Blood Donation Request and Satisfaction – Taiwan Blood Service Fundatio
- (2011) Measurement and Monitoring of Flow Intensities with Applications to Control of Stochastic Systems - NSC
- (2010) Optimal Bayesian Strategies for Bandit Problems - NSC
- (2009) Uniform Design over Convex Input Domains with Application to Computer Experiments - NSC
- (2008) Evaluation of Beta Generation Algorithms - NSC
- (2007) A Measurement Based Dynamic Policy for Switched Processing Systems – NSC
- (2006) Designing Algorithms for Solving Complex Network Optimization Problems – NSC
- (2005) A Note on the Generalized Shepp's Urn Scheme - NSC
- (2004) Designing Efficient Simulation Algorithms for Complex Queueing Models – NSC
- (2003) Analysis and Study of Parallel and Distributed Processing Systems with Shared Resources (2/2) - NSC
- (2002) Analysis and Study of Parallel and Distributed Processing Systems with Shared Resources (1/2) - NSC

GRANT PROPOSALS REVIEW

- MST Research Grants (Taiwan)
- NSC Research Grants (Taiwan)

ACADEMIC ASSOCIATION

- Member of International Statistical Institute (ISI)
- Lifetime Member of Chinese Institute of Proability and Statistics
- Lifetime Member of Chinese Institute of Industrial Engineers