

Curriculum vitae of Carrie Ka-Yuk LIN (林嘉玉)

Academic qualifications

BSc in Mathematics & Statistics (Class I in 1986), University of Birmingham, UK

(University Undergraduate Prize in 1983 - 84; Binder Hamlyn Prize in 1984 - 85)

MSc in Operations Research (1989), Massachusetts Institute of Technology, Mass., USA

PhD in Operational Research (1995), Department of Mechanical and Manufacturing Engineering, University of Birmingham, UK (Supervisor: Professor K B Haley)

(Sir Edward Youde Memorial Fund Overseas Fellowship 1991 – 1994)

Previous academic position

University Lecturer (Sept. 1994 - Aug 1996), Department of Applied Statistics & Operational Research, City Polytechnic of HK;

Assistant Professor (Sept. 1996 – June 2011), Department of Management Sciences, City University of HK

Present academic position

Associate Professor (July 2011 -), Department of Management Sciences, City University of HK

Research areas

Scheduling; Optimization; Capacity planning; Simulation; Health care applications

Publications

- 1 Carrie Ka Yuk Lin, “Integrated capacity and appointment scheduling strategy for access time management”, *International Journal of Business & Economic Development*, Vol. 2, No. 3, p1-15, 2021
- 2 Carrie Ka Yuk Lin, “Dynamic appointment scheduling with forecasting and priority-specific access time service level standards”, *Computers & Industrial Engineering*, Vol., 135, p970-986, 2019
- 3 Carrie Ka Yuk Lin, “Dynamic appointment scheduling in priority queueing systems with access time targets”, *Lecture Notes in Management Science*, (the 9th International Conference on Applied Operational Research, ORLab Analytics Inc., Taoyuan, Taiwan 18-20 December 2017), Vol. 9, p33-40, 2017. Retrieved 25 March 2018 from <http://www.orlabanalytics.ca/lnms/archive/v9/lnmsv9p33.pdf>
- 4 Carrie Ka Yuk LIN, Teresa Wai Ching LING, and Wing Kwan YEUNG, “Resource allocation and outpatient scheduling using simulation optimization”, *Journal of Healthcare Engineering*, Vol. 2017, article ID 9034737, 19 pages, 2017. <https://doi.org/10.1155/2017/9034737>
- 5 Jonathan W. C. Ng and Carrie K. Y. Lin, “Planning the capacity of a hospital lift system”, *International Journal of Innovation, Management and Technology*, Vol. 7, No. 5, p196-199, 2016
- 6 Jonathan Wing Cheong Ng and Carrie Ka Yuk Lin, “Planning the capacity of hospital lifts for a new ambulatory block”, *Lecture Notes in Management Science* (the 8th International Conference on Applied Operational Research, ORLab Analytics Inc., Rotterdam, the Netherlands 28-30 June 2016), Vol. 8, p78-85, 2016. Retrieved 25 August 2022 from <https://www.orlabanalytics.ca/lnms/archive/v8/lnmsv8p72.pdf>
- 7 LIN, Ka Yuk Carrie, “An adaptive scheduling heuristic with memory for the block appointment system of an outpatient specialty clinic”, *International Journal of Production Research*, Vol. 53, No. 24, p7488-7516, 2015

- 8 Carrie Ka Yuk Lin, "Solving a location, allocation, and capacity planning problem with dynamic demand and response time service level", *Mathematical Problems in Engineering*, Vol. 2014, Article ID 492340, 25 pages, 2014. <https://doi.org/10.1155/2014/492340>
- 9 C. K. Y. Lin, "A decision-support simulator for improving patient flow and increasing capacity at an eye outpatient department", *Proceedings of the 2013 IEEE Symposium on Computational Intelligence in Healthcare and e-health (CICARE)*, Singapore 16 – 19 April 2013, pp 21-26
- 10 C. K. Y. Lin, "A vehicle routing problem with pickup and delivery time windows, and coordination of transportable resources", *Computers & Operations Research*, Vol. 38, No. 11, p1596-1609, 2011
- 11 C. K. Y. Lin, "Stochastic single-source capacitated facility location model with service level requirements", *International Journal of Production Economics*, 117(2), 439-451, 2009
- 12 C. K. Y. Lin, "A cooperative strategy for a vehicle routing problem with pickup and delivery time windows", *Computers & Industrial Engineering*, 55(4), 766-782, 2008
- 13 C. K. Y. Lin, Resources requirement and routing in courier service. In: Caric T. and Gold H. (eds.), *Vehicle Routing Problem*. ISBN: 978-953-7619-09-1. I-Tech Education and Publishing, Vienna (Croatia branch), p125-142, 2008
- 14 C. K. Y. Lin and R.C.W. Kwok, "Multi-objective metaheuristics for a location-routing problem with multiple use of vehicles on real data and simulated data", *European Journal of Operational Research*, 175(3), 1833-1849, 2006
- 15 S. C. K. Chu, C. K. Y. Lin and S. S. Lam, "Hospital lift system simulator: a performance evaluator-predictor", *European Journal of Operational Research*, 146(1), 156-180, 2003
- 16 C. K. Y. Lin, C. L. Wong and Y. C. Yeung, "Heuristic approaches for a scheduling problem in the plastic molding department of an audio company", *Journal of Heuristics*, 8(5), 515-540, 2002
- 17 C. K. Y. Lin, C. K. Chow and A. Chen, "A location-routing-loading problem for bill delivery services", *Computers & Industrial Engineering*, 43(1), 5-25, 2002
- 18 C. K. Y. Lin, K. F. Lai and S. L. Hung, "Development of a workforce management system for a customer hotline service", *Computers & Operations Research*, 27(10), 987-1004, 2000
- 19 C. K. Y. Lin, "Analysis of quota assignment and time block duration in multi-block appointment systems", *IMA Journal of Mathematics Applied in Business and Industry*, 11(2), 85-99, 2000
- 20 C. K. Y. Lin, "Microcomputer-based workforce scheduling for hospital porters", *Journal of Management in Medicine*, 13(4), 251-262, 1999
- 21 C. K. Y. Lin, K. B. Haley and C. Sparks, "A comparative study of both standard and adaptive versions of threshold accepting and simulated annealing algorithms in three scheduling problems", *European Journal of Operational Research*, 83(2), 330-346, 1995
- 22 S. C. K. Chu and C. K. Y. Lin, "Cohort analysis technique for long-term manpower planning: the case of a Hong Kong tertiary institution", *Journal of the Operational Research Society*, 45(6), 696-709, 1994
- 23 C. K. Y. Lin and K. B. Haley, "Scheduling two-phase jobs with arbitrary time lags in a single-server system", *IMA Journal of Mathematics Applied in Business & Industry*, 5(2), 143-161, 1993/4
- 24 S. C. K. Chu and C. K. Y. Lin, "A manpower allocation model of job specialization", *Journal of the Operational Research Society*, 44(10), 983-990, 1993
- 25 S. C. K. Chu, C. K. Y. Lin and K. Ng, "Centralized versus decentralized manpower resource planning: the case of a Hong Kong company", *Journal of the Operational Research Society*, 42(7), 525-536, 1991

Funded research projects (as principal investigator)

- (1) “Multi-objective resource allocation and appointment scheduling for outpatient clinics”
(CityU Strategic Research Grant 7004148: Oct 2013 – March 2015)
- (2) “Dynamic vehicle routing problems with pickup and delivery time windows — territory planning and scheduling” (CityU Strategic Research Grant 7002524: April 2010 – March 2012)
- (3) "Resources requirement and routing in courier service with cooperative operations and transfer opportunity"
(CityU Strategic Research Grant 7002261: April 2008 - September 2009)
- (4) “Multi-resource vehicle routing problem with pickup and delivery time windows” (CityU Strategic Research Grant 7001736: July 2005 - February 2007)
- (5) “Integrated planning of location, routing and assignment in delivery services with cost and workload balancing criteria” (CityU Strategic Research Grant 7001316: September 2002 - August 2004)
- (6) “Hybrids and adaptive approaches of local search heuristics in scheduling problems with benchmarks” (RGC General Research Fund (GRF) 9040127; December 1995 - May 1998)

Funded research project (co-investigator)

“Delivering 21st century healthcare in Hong Kong – Building a quality-and-efficiency driven system”
(RGC Theme-based Research Scheme, project no. T32-102/14-N, HK\$20.45M, Nov. 2014 - Oct. 2019)

Applied research project (with report)

C. K. Y. Lin, W. S. Tam, K. Y. Cheung, S. W. Leung (Nov. 2010 – July 2012), “Patient flow study in Eye Outpatient Department with a prediction model on congestion”, United Christian Hospital, Hospital Authority, Hong Kong, China (Research Ethics Committee, ref.: KC/KE-10-0182/ER-2)

Consultancy projects (with reports)

- (I) Jonathan Ng, Carrie Lin (April – December 2014), “Planning the capacity of hospital lift and escalator system of the new ambulatory block in United Christian Hospital”, The University of Hong Kong (End client: Hospital Authority Head Office, Hong Kong)
- (II) C. K. Y. Lin (June 2001), "Lift traffic simulation for the redevelopment and expansion of Pok Oi Hospital", Hospital Authority, (Hong Kong, China)
- (III) Sydney Chu, Carrie Lin, Stella Cheung, Franklin Lam, Mary Ho, Hong Fung, Donald Li (March 1997), "Simulation study of hospital lift system (HLS): a performance evaluator-predictor (PEP)", Hospital Authority, (Hong Kong, China)
- (IV) Sydney C K Chu, Carrie K. Y. Lin, Stella L H Cheung, Mary P P Ho, Hong Fung, Michael Yuen, Pauline Lo (January 1996), "Feasibility study of the pneumatic tube system for North District Hospital", Hospital Authority, (Hong Kong, China)

Other consultancy projects

- (i) C. K. Y. Lin (June - August 2006), “Donor service operation review – develop the best practice of workflow and information flow”, Hong Kong Red Cross
- (ii) C. K. Y. Lin, S. L. Hung (June 1997 – Oct 1998), “Development of a workforce management system for SmarTone Mobile Communications Limited”, SmarTone Mobile Communications Limited

Prizes from applied work

- [1] “Manpower planning of porters services by use of management science techniques for Tuen Mun Hospital”. This joint work with Tuen Mun Hospital and a final year BBAQAB student was invited as one of the presentations in the Best Hospital Programme of 1996-97, Hospital Authority Convention in Hong Kong, May 1997. The poster display was awarded the 1st runner-up prize in the category “Re-engineering health support systems”.
- [2] Consultancy project (III): The poster display was awarded the 2nd runner-up prize in the category “Innovations, infrastructure technology” in the International Hospital Federation Pan Regional Conference 1996, Hospital Authority Convention in Hong Kong.

Professional membership

The Operational Research Society of Hong Kong (ORSHK), Secretary (1 March 2022 -)
The European Working group on Operational Research Applied to Health Services

Reviewer for international journals

Operations Research, Transportation Research Part C, European Journal of Operational Research, Annals of Operations Research, International Journal of Production Economics, Computers & Operations Research, International Journal of Production Research, Computers & Industrial Engineering, OMEGA, European Journal of Industrial Engineering, International Journal of Modelling and Simulation, Engineering Optimization, Scientia Iranica, Journal of Biomedical Informatics, Health Systems, International Transactions in Operational Research

Community service

Employment survey of wheelchair users for the Direction Association for the Handicapped (in supervising a master project course BMS5003 from September 2021 – August 2022)

Academic Advisory Board member of the CSL Data Analytics Case Competition (jointly organized by CSL Mobile Limited, College of Business and the Department of Management Sciences at CityU from 12 September 2019 – 10 January 2020)

Offered voluntary service to Hospital Authority (The Professional Services & Facilities Management) during the SARS outbreak (March – June 2003) as a member of the departmental team