CONTACT

hclau@smu.edu.sg

(+65) 6828 0229

www.mysmu.edu/faculty/hclau

Singaporean

EDUCATION

Ph.D. in Computer Science (1996)
Tokyo Institute of Technology, Japan

M.Sc. in Computer Science (1988)
University of Minnesota, USA (Summa Cum Laude)

B.Sc. in Computer Science (1987)
University of Minnesota, USA (Summa Cum Laude)

RESEARCH TOPICS

- AI Planning & Scheduling
- Optimization & Operations Research
- Learning in Optimization
- Quantum & Quantum-Inspired Algorithms
- Multi-Agent Systems
- Logistics & Transportation
- Heuristics & Metaheuristics
- Mathematical Modeling
- Supply Chain Management
- Healthcare Operations

SELECTED SERVICE

- Area Chair, AAAI 2027
- Associate Editor, IEEE Trans. on Autonomous Sci and Engineering
- Associate Editor, ACM Journal on Autonomous Transportation Syst.
- Associate Editor, Journal of Scheduling
- Program Vice-Chair, HPC Asia 2023
- General Chair, MIC 2013

KEY HONORS

- Changjiang Scholar, Ministry of Education, China (2025)
- World's Top 2% Scientists (Stanford / Elsevier), 2020-now
- Outstanding Professor Award, IEOM Society (2021)

LAU HOONG CHUIN

TENURED FULL PROFESSOR & SENIOR PRINCIPAL SCIENTIST

AI Planning & Decision Making | Optimization & Operations Research | Quantum Computing

Experienced researcher and educator with more than 25 years of full-time academic and research leadership experience. Deeply engaged in the intersection of Artificial Intelligence, Operations Research, and Quantum Computing to solve complex, real-world problems in logistics, transportation, emergency response, and healthcare. Proven track record of bridging academia and industry through deployable, data-driven mathematical models and patented technologies, having secured nearly S$50 million in competitive research funding as Principal Investigator, plus a further S$30 million as Co-Investigator, across three decades.

PROFESSIONAL EXPERIENCE

Professor of Computer Science — **Apr 2014 – Present**
School of Computing and Information Systems, SMU

Senior Principal Scientist (joint appointment) — **Jul 2022 – Present**
*Institute of Advanced Intelligence and Computing (A*STAR), Singapore*

Associate Professor of Information Systems — **Jul 2005 – Dec 2013**
School of Computing and Information Systems, SMU

Assistant Professor — **Sep 2000 – Jun 2005**
School of Computing, National University of Singapore

Member of Research Staff — **Oct 1996 – Sep 2000**
*Kent Ridge Digital Labs (now Institute for Infocomm Research, A*STAR)*

Member of Technical Staff — **Jan 1991 – Jan 1993**
Information Technology Institute, National Computer Board

Research Leadership

Director — **2026 – now**
Center for Human-Centered AI for Operational Planning and Resilience (HOPE), SMU

- Directing a university center focussing on human-centered AI for planning in high-stake environments with initial funding of S$14m

Director — **2014 – 2021**
Fujitsu-SMU Urban Computing & Engineering (UNiCEN) Corporate Lab, SMU

- Directed a S$21m industry-university lab delivering AI-driven urban computing research and development with Fujitsu and A*STAR

Deputy Director — **2011 – 2015**
Living Analytics Research Centre, SMU

- Co-led a S$26m national research centre spanning AI, urban mobility and social analytics

Director, Defense Logistics — **2001 – 2005**
The Logistics Institute Asia Pacific, NUS

- Directed a S$5m MINDEF-funded lab delivering research and solutions in defence/military logistics

Entrepreneurship

Founder & Chief Science Officer, *horaion.com, Singapore* — **2026 – Present**

Chief Technology Officer, *iFusion Pte Ltd, Singapore* — **1999 – 2001**

VISITING POSITIONS & INTERNATIONAL AFFILIATIONS

- Visiting Professor (Sabbatical Leave), Tohoku University, Japan, Jun 2025 – Jun 2026
- Visiting Professor (Sabbatical Leave), Eindhoven University of Technology, Netherlands, Oct 2021 – Dec 2021
- Specially Appointed Professor, World Research Hub Initiative, Institute of Innovative Research, Tokyo Institute of Technology, Japan, Dec 2019 – Dec 2022
- Visiting Professor, Zhejiang University, China, Jun 2014
- Visiting Professor, Xiamen University, China, Jul 2013
- Visiting Professor, Tokyo Institute of Technology, Japan, Feb 2013 – Mar 2013
- Visiting Professor, Institute of Computing Technologies, Chinese Academy of Sciences, China, Dec 2012
- Visiting Professor, Wharton Business School, University of Pennsylvania, USA, Nov 2010 – Dec 2010
- Visiting Scholar, Graduate School of Informatics, Kyoto University, Japan, Dec 2000 – Jan 2001
- Visiting Scholar, AI Research Lab, Fujitsu Laboratories Limited, Japan, Oct 1993 – Oct 1996
- Visiting Scholar, Max Planck Institute for Informatics, Germany, Jun 1996 – Sep 1996

EDITORSHIP & CONFERENCE ORGANIZATION

Editorial Roles

- Editorial Board, Quantum Reports, 2026-now
- Associate Editor, ACM Journal on Autonomous Transportation Systems, 2022 – present
- Associate Editor, Journal of Scheduling, 2018 – present
- Associate Editor, IEEE Transactions on Automation Science and Engineering, 2013 – 2017
- Member, Editorial Board, Web Intelligence: An International Journal, 2015 – present
- Guest Editor, Special Issue, Journal of Heuristics
- Guest Editor, Special Issue, Web Intelligence and Agent Systems Journal

Conference Organization

- Area Chair, AAAI 2027
- Program Vice-Chair, High Performance Computing Asia (HPC-Asia) 2023
- Program Track Chair, International Conference on Information Systems (ICIS) 2017, Curriculum and Education Track
- Program Vice-Chair, IEEE/WIC/ACM WI-IAT 2015
- General Chair, Metaheuristics International Conference (MIC) 2013
- Program Co-Chair, IEEE/WIC/ACM IAT 2012
- Program Co-Chair, ACM International Conference on Electronic Commerce (ICEC) 2012
- Program Committee / Senior Program Committee Member: AAAI, AAMAS, IJCAI, ICAPS, NeurIPS, GECCO, IEEE CASE, IEEE ICTAI, LION, MISTA (over 20 years)

Professional Membership

- Registered Member, Chartered Institute of Logistics and Transportation (UK), and Board Member, Singapore Branch

AWARDS & RECOGNITION (PAST FIVE YEARS)

- Singapore International Chamber of Commerce (SICC) Award, "Most Scalable Collaboration" category, 2026
- Changjiang Scholar, Ministry of Education, People's Republic of China, 2025
- World's Top 2% Scientists in Artificial Intelligence, Stanford University / Elsevier, 2020 – present
- Excellence Recognition Award, OpenGov Asia, 2024
- Global Manufacturing Leadership Award (Supply Chain Category), US Manufacturing Leadership Council, 2023
- Outstanding Professor Award, Industrial Engineering and Operations Management Society, 2021

ACADEMIC OUTPUT (PAST FIVE YEARS)

Co-author of *Business Analytics for Decision Making*, CRC Press, 2016 (2nd edition in preparation, expected end 2026).

250+ publications, with 7500 Google Scholar citations and 3,000+ Scopus citations, published in leading journals (Transportation Science, INFORMS Journal on Computing, Transportation Research Parts C/E, JAIR, EJOR, IEEE T-ASE, ACM TIST) and top AI conferences (NeurIPS, AAAI, IJCAI, ICAPS, ICLR, AAMAS, UAI).

Selected Publications — Transportation & Logistics

- Sharma M. and Lau, H. C. Securing the Flow: Strategic Storage and Corridor Design for Maritime Energy Security under Chokepoint Disruptions. Transportation Research Part E. To appear.
- Case, J., Yang, J., Lau, H.C., & Liu, L. (2025). Multi-period Risk-Aware Procurement Optimization under COVID-19 Disruption. Transportation Research Part E, 202, 104272.
- Yang, J., Lau, H.C., & Wang, H. (2024). Optimization of Customer Service and Driver Dispatch Areas for On-Demand Food Delivery. Transportation Research Part C, 165, 104653.
- Du, J., Zhang, Z., Wang, X., & Lau, H.C. (2023). A Hierarchical Optimization Approach for Dynamic Pickup and Delivery Problem with LIFO Constraints. Transportation Research Part E, 175.
- Song, R., Lau, H.C., Luo, X., & Zhao, L. (2022). Coordinated Delivery to Shopping Malls with Limited Docking Capacity. Transportation Science, 56(2), 501–527.
- Lau, H.C., & Li, B. (2021). Solving the Winner Determination Problem for Online B2B Transportation Matching Platforms. Transportation Research Part E, 150.

Selected Publications — Artificial Intelligence

- Zhang, Z., Ma, Y., Cao, Z., & Lau, H.C.* (2025). Probing Neural Combinatorial Optimization Models. Proceedings of NeurIPS 2025.
- Zhang, Z., Cao, Z., & Lau, H.C.* (2025). Neuro-Ins: A Learning-based One-shot Node Insertion for Dynamic Routing Problems. IEEE Transactions on Knowledge and Data Engineering, 37(9), 5495–5507.
- Bernardelli, A.M., Gualandi, S., Milanesi, S., Lau, H.C., & Yorke-Smith, N. (2024). Multiobjective Linear Ensembles for Robust and Sparse Training of Few-Bit Neural Networks. INFORMS Journal on Computing.
- Joe, W., & Lau, H.C.* (2023). Learning to Send Reinforcements: Coordinating Multi-Agent Dynamic Police Patrol Dispatching and Rescheduling via Reinforcement Learning. Proceedings of IJCAI-2023.
- Joe, W., Lau, H.C*., & Pan, J. (2022). Reinforcement Learning Approach to Solve Dynamic Bi-Objective Police Patrol Dispatching and Rescheduling Problem. Proceedings of ICAPS 2022.
- Singh, A.J., Kumar, A., & Lau, H.C.* (2021). Learning and Exploiting Shaped Reward Models for Large Scale Multiagent RL. Proceedings of ICAPS 2021.

MAJOR RESEARCH GRANTS

Period	Funding Agency	Role	Amount	Project Title
1997–2000	National Science and Technology Board (NSTB) [now A*STAR]	PI	S$1.2m	ROVER & VOLVO (Dynamic Vehicle Routing and Inventory Replenishment)
1997–1999	National Science and Technology Board (NSTB)	Co-PI	S$113k	Personalized Intermodal Public Transport Route Guidance
2000–2001	National Science and Technology Board (NSTB)	Co-PI	S$96k	Electronic Supply Chains Survey
2002–2007	MINDEF via Defense Science and Technology Agency (DSTA)	PI	S$5m	JAGUAR — Joint Armed-forces-GT-NUS Applied Research Defense Logistics Programme
2006–2009	Agency for Science and Technology Research (A*STAR)	PI	S$444k	Combinatorial Auctions for Decentralized Resource Allocation & Scheduling in Supply Chains
2009–2010	PSA Inc.	PI	S$50k	Combinatorial Auctions Prototype for Operational Allocation of Container Terminal Resources
2010–2011	ST Dynamics Pte Ltd	PI	S$90k	Dynamic Resource Scheduling in Large Logistics Complex
2011–2015	National Research Foundation (NRF)	Area PI / Deputy Director	S$26m	Living Analytics Research Centre (LARC)
2011–2013	Singapore-MIT Alliance (SMART) Future Urban Mobility Programme	PI	S$475k	Coordinating Automated Para-Transit Service Operations
2013–2015	Agency for Science and Technology Research (A*STAR)	PI	S$579k	Market Mechanisms for Multi-Party Coordination of Urban Logistics Operations

Period	Funding Agency	Role	Amount	Project Title
2014–2019	National Research Foundation (NRF) and A*STAR	PI and Lab Director	S$26m	Fujitsu-SMU Urban Computing and Engineering Corp Lab (UNiCEN) and Urban Computing Platform
2016–2017	Singapore Ministry of Home Affairs (MHA)	PI	S$253,266	Optimization of Ground Response Forces
2016–2017	Singapore Ministry of Home Affairs (MHA)	Co-PI	S$356,798	Dynamic Resource Optimization for Emergency Response
2019–2020	Singapore Ministry of Home Affairs (MHA)	Co-PI	S$259,312	Optimization of Integrated Ambulance and Fire Engine Response
2020–2022	Fujitsu Limited, Japan	PI	S$454,860	Enhancing Digital Annealer (EDA)
2021–2022	Y3 Technologies	PI	S$150,000	CUDO Customization and Integration
2021–2022	IBM, Singapore	PI	S$104,000	Supply Chain Resiliency Optimization
2022–2023	AI Singapore and uParcel	PI	S$358,000	On Demand Delivery Assignment Recommender
2022–2024	National Research Foundation (NRF)	PI	S$300,000	Optimizing Supply Chain Resilience with Quantum Sampling (National Quantum Computing Hub)
2022–2024	AI Singapore and BIPO Services	PI	S$420,000	Next Generation Roster Management via Reinforcement Learning
2023–2025	AI Singapore and BIPO Services	PI	S$410,280	Acute Workforce Response to “Demand Pulled” Patient Lifecycle Data via Generative Flow Networks and Graph Neural Networks
2026–2027	National Quantum Office	PI	S$300,000	Optimizing Inventories in the Presence of Demand and Supply Uncertainty
2026–2028	Singapore Ministry of Education (MOE) Tier 2	Co-PI	S$813,579	Towards Practical Neural Solvers for Vehicle Routing Problems
2026–2028	AI Singapore	Co-PI	S$1,002,721	VISTA: A Value-Informed Safety & Trust Architecture for Autonomous Agents
2026–2031	Singapore Ministry of Education (MOE) Tier 3	PI	S$9.371m	Human-Centered Operational Pandemic Resilience (HOPE)

PATENTS

Date of Filing	Publication No.	Patent Title
10 Feb 2021 (granted Jul 2026)	10202101416T	CUDO: Systems and Methods for Scalable, Decentralized and Coordinated Logistics Schedule Planning
Mar 2015 (granted Aug 2017)	10201509975U	Crowd Management System

COURSES TAUGHT

SMU — Undergraduate Programme

- AI in Logistics and Supply Chains
- Design and Analysis of Algorithms
- Computational Thinking
- Enterprise Analytics for Decision Support
- Computer Science Project Experience

SMU — Postgraduate Professional Programmes

- AI Planning and Decision Making
- Quantum Algorithms and Optimization
- Algorithm Design and Implementation
- Capstone Project

SMU — Postgraduate Research Programmes

- Algorithms and Optimization
- Advanced Design and Analysis of Algorithms
- Advanced Topics in Intelligent Systems
- Combinatorial Optimization
- Empirical Research Project

Other Institutions

- Combinatorial and Graph Algorithms (NUS)
- Design and Analysis of Algorithms (NUS)
- Object-Oriented Software Design (NUS)