

# Research Statement

SIAU Keng Leng

School of Computing and Information Systems, Singapore Management University

Tel: (65) 6828-4868 Email: klsiau@smu.edu.sg

29 (Day) 12 (Month) 2025 (Year)

## Background

I seek to conduct state-of-the-art, high-impact research that is closely aligned with SMU's strategic priorities and Singapore's national information technology initiatives. My research aims to deliver tangible benefits to Singapore, Asia, and the global community, while generating findings that make meaningful and impactful contributions to both academic scholarship and professional practice.

## Research Areas

My current research interests can be classified into the following areas:

**(i) Artificial Intelligence (AI) and Robotics for Ageing Population**

As Singapore rapidly approaches super-aged society status, several national initiatives, including Active Ageing, Successful Ageing, Healthier SG, and Age Well SG, have been launched to address the needs of an ageing population. Prime Minister Lawrence Wong has articulated a two-pronged strategy to support older adults, focusing on the integration of artificial intelligence (AI) and community-based initiatives. In this context, we are actively collaborating with organizations such as Thye Hua Kwan, Lions Befrienders, St. Luke's Eldercare, as well as healthcare institutions in the region, including West China Hospital, which is the world's largest single-site hospital and it is consistently ranked among the top three hospitals in China. This research stream examines the application of AI-driven solutions to support ageing populations in Singapore and other regions. We are also examining the use of medical assistive and companion robots. To date, two research proposals within this research stream have been submitted in 2025.

(a) Culturally-Attuned AI Chatbots: Conversational Technologies for Ageing Populations. Siau Keng Leng (PI), Goh Kim Huat (Collaborator, NTU), Cheong Weiyang (Collaborator, SMU), Hamari Juho (Collaborator, Tampere University, Finland). Funding agency: MOE Academic Research Fund Tier 2. Outcome: Under review at the funding agency (i.e., submitted by SMU).

(b) Successful Ageing with AI -- Anthropomorphic Design of Digital Human Chatbots. Siau Keng Leng (PI), Hamari Juho (Collaborator, Tampere University, Finland), Xi Nannan (Collaborator, Tampere University, Finland), Wang Hailiang (Collaborator, Hong Kong Polytechnic University), Wang Le (Collaborator, City University of Hong Kong), Cheong Wei Yang, SMU). Funding agency: MOE Social Science and

Humanities Research Thematic Grant. Outcome: Suggest revising and resubmit in 2026.

**(ii) Resilient Workforce and Digital Transformation**

Information systems and digital technologies, particularly advanced innovations such as artificial intelligence, robotics, and the metaverse, are fundamentally reshaping the way we work, live, and cooperate as a society. As Singapore advances toward a digital economy, its workforce must remain agile, resilient, and motivated to continuously reskill and upskill in response to rapidly evolving global and regional geopolitical dynamics, technological revolutions and evolutions, and emerging business opportunities. To enhance competitiveness, Singapore's workforce must effectively embrace constant technological disruption and shifting skill set requirements. In this context, we are pursuing an innovative research stream and studying the application of the concept of *Flow* to workforce resilience. By developing a "WorkFlow" framework, we aim to foster sustained motivation and engagement, encouraging workers to pursue continuous learning and skill development proactively. This stream of research aims to cultivate a resilient workforce that can thrive in a rapidly evolving digital era. Two funding proposals were submitted in this area in 2025:

- (a) Adult Self-Motivated Learning and Job Redesign Through Resilient "WorkFlow". Siau Keng Leng (PI), Nah Fui Hoon (Co-PI). Funding agency: SMU Resilient Workforces Institute. Outcome: Not funded.
- (b) FLIP: A Flow Experience-based Scaffolding System to Enhance Self-Motivated Learning. Nah Fui Hoon (PI), Siau Keng Leng (Co-PI). Funding agency: MOE Academic Research Fund Tier 2. Outcome: Revision based on internal evaluation before campus consideration.

**(iii) Digital Evolution: Future of Work, Education, and Society**

The Digital Evolution is reshaping the future of work, education, and broader social/relationship structures through rapid advances in digital technologies such as artificial intelligence, the metaverse, immersive technology, and digital platforms. These developments are transforming how people learn, work, interact, and trust one another, as well as how they trust new technologies. Two funding proposals were submitted in this area in 2025:

- (a) Design and Evaluation of Disclosure Mechanisms for Trustworthy GenAI. Ke Ping Fan (PI), Dong John Qi (Co-PI, NTU), Siau Keng Leng (Co-PI). Funding agency: MOE Academic Research Fund Tier 2. Outcome: Revision based on internal evaluation before campus consideration.

(b) "Wow! I did not Know this is the Cultural Context!" Advanced Immersive Technology to Enhance Cultural Literacy. Funding agency: Education Research Funding Programme (ERFP). Tier 2. Siau Keng Leng (PI), Nah Fui Hoon (Co-PI), Xi Nannan (Collaborator, Tampere University, Finland). Outcome: Under review at the funding agency (i.e., submitted by SMU).

## Selected Publications and Outputs

### Journal Papers

1. Wang, R., Zhang, Z., Siau, K., Zhang, Z., "Digital communications between firms and investors: Impact of explanatory responses on investor engagement in online financial Q&A," *Electronic Markets*, Vol. 35, No. 1, 2025, Article Number 32. (SCIS A)
2. Siau, K., Chen, X., Tan, X., "Design Principles for Customer-Engaging Digital Service Systems-- An Action Research Study," *Journal of Global Information Management*, 2025. (to appear)
3. Qian, Y., Siau, K., "A Qualitative Theory Building Research on Digital Law, Legal AI, and LegalTech," *Journal of Global Information Management*, 2025. (to appear)
4. Yang, Y., Liu, X., Luois, J., Fang, Y., Wen, X., Sheng B., Siau, K., "Analytic Theories on Artificial Intelligence, Data Science, and Metaverse in the Field of Digital Medicine and Healthcare," *Journal of Organizational and End User Computing*, 2025.
5. Feng, W., Siau, K., Lau, W., Goh, L., Chen, H., "An Agent-Based Computational Finance Simulation Model to Study Market Efficiency," *Journal of Global Information Management*, 2025, Vol. 33, No. 1, 2025.
6. He, J., Ni, J., Zhang, Y., Siau, K., "Real-Time Task Scheduling Strategy for 3D Printing Cloud Platforms in Health Scenes," *Applied Intelligence*, Vol. 55, 1002, 2025. (Citation count 1)
7. Qian, Y., Siau, K., "Advances in IoT, AI, and Sensor-Based Technologies for Disease Treatment, Health Promotion, Successful Ageing, and Ageing Well," *Sensors*, 2025, 25(19), 6207; <https://doi.org/10.3390/s25196207> (Citation count 4)
8. Wang, R., Zhang, Z., Siau, K., Zhang, Z., "Managing rumors on electronic interaction platforms: How management responses affect investor reaction," *Information Processing & Management*, Vol. 62, No. 5, 2025, Article Number 104162. (SCIS A, Citation count 2)

9. Qian, Y., Siau, K., IoT in Sustainability and IoT in the AI and Metaverse Age, *IEEE Internet of Things Magazine*, Vol. 8, No. 3, 2025, pp. 92-98, doi: 10.1109/IOTM.001.2400179. (Citation count 2)
10. Bian, Z., Zhang Y., Siau, K., Zhang Y., He, J., Risk Spillover Effect of China-ASEAN Supply Chains: Insights of Industrial Transfer, *Journal of Global Information Management*, Vol. 33, No. 1, 2025. (Citation count 1)
11. Stephanidis, C., Salvendy, G., Antona, M., Duffy, V., Gao, Q., Karwowski, W., Konomi, S., Nah, F., Ntoa, S., Rau, P., Siau, K., Zhou, J., "Seven HCI Grand Challenges Revisited: Five-Year Progress," *International Journal of Human-Computer Interaction*, Vol. 41, Issue 19, 2025, pp. 1-49. (SCIS A, Citation count 28)
12. Wang, Y., Wang, L., Siau, K., "Human-Centered Interaction in Virtual Worlds: A New Era of Generative Artificial Intelligence and Metaverse," *International Journal of Human-Computer Interaction*, Vol. 41, Issue 2, 2025, pp. 1459-1501. (SCIS A, Citation count 110)
13. Huo, X., Siau, K., "Generative Artificial Intelligence in Business Higher Education: A Focus Group Study," *Journal of Global Information Management*, Vol. 32, No. 1, 2024, pp. 1-21. (Citation count 27)
14. Zhang, Y., Siau, K., "Meta-Entrepreneurship: An Analysis Theory on Integrating Generative AI, Agentic AI and Metaverse for Entrepreneurship," *Journal of Global Information Management*, Vol. 32, No. 1, 2024, pp. 1-21. (Citation count 11)
15. He, J., Wu, J., Siau, K., "Task Scheduling Strategy for 3DPCP Considering Multidynamic Information Perturbation in Green Scene," *Journal of Global Information Management*, Vol. 32, No. 1, 2024, pp. 1-23. (Citation count 2)
16. Qian, Y., Siau, K., Nah, F., "Societal Impacts of Artificial Intelligence: Ethics, Legal, and Governance Issues," *Societal Impacts*, Vol. 3, June 2024, 100040. (Citation count 72)
17. Charles, V., Rana, N., Pappas, I., Kamphaug, M., Siau, K., Engo-Monsen, K., "The Next 'Deep' Thing in X to Z Marketing: An Artificial Intelligence Driven Approach," *Information Systems Frontiers*, Vol. 26, 2024, pp. 851–856. (SCIS A, Citation count 12)
18. Schiller, S., Nah, F., Luse, A., Siau, K., "Men Are from Mars and Women Are from Venus: Dyadic Collaboration in the Metaverse," *Internet Research*, Vol. 34, No. 1, 2024, pp. 149-173. (SCIS A, Citation count 33)
19. Nah, F., Zheng, R., Cai, J., Siau, K., Chen, L., "Generative AI and ChatGPT: Applications, Challenges, and AI-Human Collaboration," *Journal of Information Technology Case and Application Research*, Vol. 25, No. 3, 2023, pp. 277-304. (Citation count 1748)

20. Xie, X., Siau, K., Chen, C., "Does more investment in universities improve their performances? A Study on the Performance of Chinese Universities using Data Envelopment Analysis," *Journal of Global Information Management*, Vol. 31, Issue 1, 2023, pp. 1- 20. (Citation count 4)

### Conference Papers

1. Huo, X., Siau, K., "Immersion in Virtual Cultural Heritage: Framework, Research Landscape, Future Directions, and Ongoing Study," *20th ACM SIGGRAPH International Conference on Virtual-Reality Continuum and its Applications in Industry (ACM SIGGRAPH VRCAI 2025)*, Macau, China, December 13-14, 2025.
2. Huang, S., Siau, K., Chen, X., "Towards Inclusive Digital Futures of Cultural Heritage: Insights from a Critical Discourse Analysis of UNESCO Dialogues," *20th ACM SIGGRAPH International Conference on Virtual-Reality Continuum and its Applications in Industry (ACM SIGGRAPH VRCAI 2025)*, Macau, China, December 13-14, 2025.
3. Qian, Y., Siau, K., "Artificial Intelligence Governance: Legal and Regulatory Issues," *Americas Conference on Information Systems (AMCIS 2025)*, Montreal, Canada, August 14-16, 2025. (SCIS White List)
4. Wang, R., Siau, K., Zhang, Z., "AI-Assisted Stress Management: Efficacy Compared to Traditional Methods," *Americas Conference on Information Systems (AMCIS 2025)*, Montreal, Canada, August 14-16, 2025. (SCIS White List)
5. Huo, X., K. Siau, "Artificial Intelligence's Role in Workplace Involution: A Text Mining Study," *Pacific Asia Conference on Information Systems (PACIS 2025)*, Kuala Lumpur, Malaysia, July 5-9, 2025. (SCIS White List)
6. Huang, S. Siau, K., "Do "Rewards" Tab on Crowdfunding Platforms Increase Project Success? Unexpected Insights from Inattentional Blindness, *Pacific Asia Conference on Information Systems (PACIS 2025)*, Kuala Lumpur, Malaysia, July 5-9, 2025. (SCIS White List)
7. Jia, F., Sia, C., Shi, Y., Nah, F., Siau, K., "Predicting Consumers' Purchase Intention of Browsed Products: A Study Based on Eye-Tracking," *China Summer Workshop on Information Management (CSWIM 2025)*, Xi'an, Shaanxi, June 28–29, 2025. (SCIS White List)
8. Liu, Z., Siau, K., Yang, S., Ma, F., "Unlocking the Power of Socio-Knowledge Association for Enterprise Risk Identification in Stock Market," *China Summer Workshop on Information Management (CSWIM 2025)*, Xi'an, Shaanxi, June 28–29, 2025. (SCIS White List)
9. Liu, Y., Siau, K., Wang, X., Yang, G., "Virtual Conferencing Fatigue: Look-alike Avatar and Facial Attractiveness," *International Conference on*

*Information Systems (ICIS 2024)*, Bangkok, Thailand, December 15-18, 2024. (SCIS White List)

10. Eldaly, A., Kang, Z., Nah, F., Chan, L., Siau, K., Liu, X., Chen, L., Yelamanchili, T., Weber, R., "Brain Synchronization Dimensionality and Flow Experience: A Video Gaming Study Using Electroencephalogram," *Workshop on Information Technologies and Systems (WITS 2024)*, Bangkok, Thailand, December 18-20, 2024. (SCIS White List)
11. Liu, Z., Leung, A., Siau, K., Zhang, Y., "Unveiling Online Investor Attention: A Social-Knowledge Graph Approach Towards Personalized Stock Recommendations," *Workshop on Information Technologies and Systems (WITS 2024)*, Bangkok, Thailand, December 18-20, 2024. (SCIS White List)
12. Qian, Y., Siau, K., "Physician-AI Collaboration: Effect of Bias and Discrimination Information Transparency," *Workshop on Information Technologies and Systems (WITS 2024)*, Bangkok, Thailand, December 18-20, 2024. (SCIS White List)
13. Xu, Y., Siau, K., Nah, F., "More Human-likeness, Less Self-disclosure? Avatars' Form Realism and Job Applicants' Self-Disclosure in AI Interviews," *China Summer Workshop on Information Management (CSWIM 2024)*, Xiamen, China, June 29–30, 2024. (SCIS White List)
14. Zhang, Y., Siau, K., Li, Z., Nah, F., Wang, L., "Meta-Entrepreneurship: Unique Features and New Possibilities for Entrepreneurship in Metaverse," *The Workshop on E-Business (WeB 2024)*, Bangkok, Thailand, December 14, 2024. (SCIS White List)
15. Qian, Y., Huo, X., Siau, K., "Physician-AI Collaboration: A Mixed Method Study," *The Workshop on E-Business (WeB 2024)*, Bangkok, Thailand, December 14, 2024. (SCIS White List)
16. Wang, R., Siau, K., Zhang, Z., "Using AI and ChatGPT in Brand Storytelling," *Americas Conference on Information Systems (AMCIS 2023)*, Panama City, Panama, August 10-12, 2023. (SCIS White List)
17. Wang, R., Siau, K., Zhang, Z., "Visual Cues in Online Corporate Social Responsibility Communication," *Pacific Asia Conference on Information Systems (PACIS 2023)*, Nanchang, China, July 8-12, 2023. (SCIS White List)
18. Liu, Y., Siau, K., "Marketing in Metaverse: Sales-Avatar Visual Features on Customer Trust," *Pacific Asia Conference on Information Systems (PACIS 2023)*, Nanchang, China, July 8-12, 2023. (SCIS White List)
19. Huo, X., Siau, K., "Generative AI and ChatGPT Impact on Technostress of Teachers," *Pacific Asia Conference on Information Systems (PACIS 2023)*, Nanchang, China, July 8-12, 2023. (SCIS White List)