



YIMING LIU

Ph.D. Candidate | Learning Analytics & Computational Psychometrics

The University of Hong Kong | Faculty of Education

eduliuyim@connect.hku.hk | yimingliu-cv.pages.dev | Google Scholar

Ph.D. candidate expecting to graduate in November 2026. My research focuses on human-human and human-AI collaborative problem solving, self-regulated learning in AI-enhanced environments, and the development and validation of questionnaires and scales using large language models.

Education

- 2026 ○ **The University of Hong Kong, Hong Kong**
Ph.D., Educational Technology and Assessment
Thesis: Assessment of collaborative problem solving through 3D multiplayer online role-playing mobile games
Supervisors: Prof. Nancy Law & Prof. Xiao Hu
- 2019 ○ **National Yang Ming Chiao Tung University, Taiwan**
M.S., Educational Technology
Thesis: Mediation analyses of the relationships among online self-regulated learning, engagement, and cognitive load: The case of an online learning environment integrated with online self-regulated learning strategies and instant feedback
Supervisor: Prof. Jerry Chih-Yuan Sun
Thesis Examiners: Prof. Jiun-Yu Wu & Prof. Chun-Min Wang
- 2016 ○ **Jinan University, Guangdong**
B.A., Chinese Linguistics and Literature
- 2016 ○ **Jinan University, Guangdong**
B.A., Finance

Research Interests

- Learning analytics
- Game-based assessment/learning
- Collaborative problem solving
- Computational psychometrics
- Self-regulated learning
- AI in education

Publications (Selected)

- Liu, Y.*, Hu, X., Ng, J. T. D., Ma, Z., & Lai, X. (2025). Ready or not? Investigating in-service teachers' integration of learning analytics dashboard for assessing students' collaborative problem solving in K-12 classrooms. *Education and Information Technologies*. [SSCI, JCR Q1, IF = 7.2]
- Liu, Y., Huang, L., & Doleck, T. (2024). How teachers' self-regulation, emotions, perceptions, and experiences predict their capacities for learning analytics dashboard: A Bayesian approach. *Education and Information Technologies*. [SSCI, JCR Q1, IF = 7.2]
- Liu, Y., Ng, J. T. D., Hu, X., Ma, Z., & Lai, X. (2024). Adopt or abandon: Facilitators and barriers of in-service teachers' integration of game learning analytics in K-12 classrooms? *Computers & Education*. [SSCI/SCIE, JCR Q1, IF = 13.2]
- Liu, Y., Sun, J. C. Y., & Chen, S. K. (2023). Comparing technology acceptance of AR-based and 3D map-based mobile library applications: A multigroup SEM analysis. *Interactive Learning Environments*. [SSCI, JCR Q1, IF = 6.7]
- Sun, J. C. Y., Liu, Y.*, Lin, X., & Hu, X. (2023). Temporal learning analytics to explore traces of self-regulated learning behaviors and their associations with learning performance, cognitive load, and student engagement in an asynchronous online course. *Frontiers in Psychology*. [SSCI, JCR Q1, IF = 3.8]
- Sun, J. C. Y., & Liu, Y.* (2021). The mediation effect of online self-regulated learning between engagement and cognitive load: A case of an online course with smart instant feedback. *International Journal of Online Pedagogy and Course Design*. [ESCI, JCR Q3, IF = 1.2]

* Denotes corresponding author.

Google Scholar: 203 citations, h-index 7, i10-index 7 (as of 8th October 2026)

Research Experience (Selected)

- | | |
|-----------|---|
| 2019-2023 | <p>○ Project Member Faculty of Education, The University of Hong Kong</p> <p>Project: Learning and Assessment for Digital Citizenship (PI: Prof. Nancy Law)</p> <ul style="list-style-type: none"> • Co-developed <i>Digital City Fighter</i>, a 3D multiplayer online role-playing mobile game for assessing primary students' collaborative problem solving. • Co-developed <i>CPSLens</i>, a learning analytics dashboard for visualizing and evaluating students' collaborative problem solving performance. • Analyzed multimodal process data using network psychometrics, latent variable modeling, and data visualization. • Drafted research proposals and manuscripts for publication. |
| 2016-2019 | <p>○ Project Member Institute of Education, National Yang Ming Chiao Tung University</p> <p>Project: The Application of Big Data in Education: From Smart Online Learning to the Flipped Classroom Integrated with Interactive Feedback Technologies (PI: Prof. Jerry Chih-Yuan Sun)</p> <ul style="list-style-type: none"> • Assisted in proposal writing for grant applications and in experimental design and implementation. • Analyzed multimodal data using latent variable modeling and temporal learning analytics. • Drafted manuscripts for publication and wrote project reports. |
| 2016-2018 | <p>○ Project Member Institute of Education, National Yang Ming Chiao Tung University</p> <p>Project: Research of Globally Meaningful and Relevant MOOCs Redevelopment Model: Cross-Cultural Design, Learning Analytics, and Curriculum Evaluation (PI: Prof. Ken-Zen Chen)</p> <ul style="list-style-type: none"> • Co-redesigned and localized <i>Learning How to Learn</i>, a Coursera MOOC. • Developed and validated test items to measure student learning outcomes. • Facilitated World Café focus groups to gather qualitative student feedback. |

Teaching Experience

- 2026
 - **Guest Lecturer | College of Information Science, The University of Arizona**
Lecture: "From Theory to Application: Unlocking 21st-Century Skills with Computational Psychometrics"
Course: INFO505: Foundations of Information
- 2025
 - **Guest Lecturer | Department of Curriculum and Instruction, The Education University of Hong Kong**
Lecture: "From Theory to Application: Unlocking 21st-Century Skills with Computational Psychometrics"
Course: EDT6001: Digital Leadership and Technologies to Transform Instruction, Learning and Evaluation
- 2023
 - **Guest Lecturer | Department of Curriculum and Instruction, The Education University of Hong Kong**
Lecture: "Game-based Assessment of Collaborative Problem Solving among Young Students"
Course: TLS6088: Effective Teaching and Learning Using Mobile Technologies
- 2022
 - **Teaching Assistant | Faculty of Education, The University of Hong Kong**
Assisted with the supervision of undergraduates' final-year projects on research design, data cleaning and coding, statistical analysis, and thesis writing.
- 2017-2019
 - **Teaching Assistant | Institute of Education, National Yang Ming Chiao Tung University**
Led tutorials, assisted in lecture preparation, provided feedback to students, and marked assignments.

Work Experience

- 2026
 - **Research Assistant | Department of Curriculum and Instruction, The Education University of Hong Kong**
Project: Design-Based Research to Develop AI-Powered Pedagogical Agents to Support Students' Socially Shared Regulated Learning in Collaborative Learning (PI: Prof. Lingyun Huang)
 - Assisted with reviewing General Research Fund (GRF) project proposals.
 - Tested an AI-powered learning system and conducted quasi-experiments.
 - Analyzed data and drafted manuscripts for journal publication.

Professional Service

- Ad Hoc Journal Reviewer: Computers & Education; British Journal of Educational Technology; International Journal of STEM Education; IEEE Transactions on Learning Technologies; Education and Information Technologies; International Journal of Computer-Supported Collaborative Learning; Australasian Journal of Educational Technology; International Journal of Human-Computer Interaction; Journal of the Association for Information Science and Technology; Asia-Pacific Education Researcher; Thinking Skills and Creativity; BMC Medical Education; Instructional Science; Information Development; Knowledge Management & E-Learning: An International Journal; Humanities and Social Sciences Communications; PLOS ONE
- Conference Reviewer: IEEE ICALT 2025; LAK 2024; ACM/IEEE JCDL 2024
- Session Chair: IEEE ICALT 2024
- Program Committee Member: GCCCE 2026 and 2025; IEEE ICALT 2025; LAK 2024; ACM/IEEE JCDL 2024
- Community Membership: National Council on Measurement in Education (NCME); Society for Learning Analytics Research (SoLAR); Asia-Pacific Society for Computers in Education (APSCE); IEEE Computer Society
- Conference & Workshop Volunteer: ACM/IEEE JCDL 2024; The University of Hong Kong-East China Normal University Joint Workshop (HKU-ECNU 2023)

Awards

- 2025, University Research Committee Conference Grant, The University of Hong Kong
- 2024 & 2021, IEEE TCLT Student Award, IEEE Technical Committee on Learning Technology
- 2023, University Research Committee International Academic Training Grant, The University of Hong Kong
- 2021, Finalist for Best Short Paper, IEEE Technical Committee on Learning Technology
- 2021, Erik Duval Travel Scholarship, The Society for Learning Analytics Research
- 2019-2023, Postgraduate Scholarship, The University of Hong Kong
- 2018, International Academic Conference Grant, Ministry of Science and Technology
- 2017-2018, Outstanding Student Scholarship, National Yang Ming Chiao Tung University
- 2016-2017, Excellent Student Scholarship, National Yang Ming Chiao Tung University

Quantitative Analysis Expertise

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|----------------------------|-----------------------|
| – Latent variable modeling | – Multilevel modeling |
| – Network analysis | – Temporal analysis |
| – Bayesian modeling | – Machine learning |
| – Data visualization | |

Software & Tools

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|------------|----------|
| – R | – Mplus |
| – SmartPLS | – SPSS |
| – Netica | – Python |
| – Figma | |