

Yihong Cheng

• 853-6865-0445 • yhcheng@cityu.edu.mo

Educational Background

Boston College (Lynch School of Education and Human Development)

09/2018–09/2022

PhD in Curriculum and Instruction

University of Minnesota, Twin Cities (College of Education and Human Development)

09/2015–05/2017

MA in Multicultural College Teaching and Learning

University of Minnesota, Twin Cities (College of Liberal Arts)

09/2011–05/2015

BA in Physics

Research Interests

STEM Education, Curriculum and Assessment, Educational Measurement

Work Experience

School of Education, City University of Macau

Taipa, Macau

Assistant Professor

08/2025–Present

- Researched on the unification of teaching, learning, and assessment
- Supervised graduate students' work on their degree theses
- Taught graduate courses in research methodology

Institute of Education, Tsinghua University

Beijing, China

Post-doctoral Researcher

05/2023-05/2025

- Elected into the Shuimu Scholar Program and the National Postdoctoral Fellowship Program for Oversea Talents
- Assisted with the development of assessment tools for the National Excellent Engineers Program
- Supported Primary School Affiliated with Tsinghua University to adapt to the New Curriculum Standard
- Led the development and validation of tools to assess AI literacy

Innovative Urban Science Education (IUSE) Lab, BC

Newton, Massachusetts, United States

Research Assistant

09/2018-12/2022

- Worked with the research team to design automated mini-greenhouses that middle schoolers and early higher schoolers could use as a means of learning programming (Python and micro:bit), exploring fundamental science concepts across disciplines, and addressing important social issues such as food justice
- Facilitated collaborating middle school and high school teachers in the greater Boston area with embedding the smart greenhouse into their classrooms
- Collected qualitative data that guided the research team to improve the design of the smart greenhouse and related curricula, provide better training for teachers, and build stronger connections between the smart greenhouse and life-relevant issues faced by participating students and their communities

Scheller Teacher Education Program (STEP) Lab, MIT

Cambridge, Massachusetts, United States

Research Assistant

05/2020-12/2022

- Facilitated virtual and in-person implementations of the Digital AI Literacy (DAILy) curriculum in middle school classrooms across the United States
- Collected and analyzed qualitative and quantitative data that revealed shifts in participating students' knowledge about AI, attitudes toward social and ethical issues in AI, and awareness of careers and futures in AI
- Collaborated with members of the lab to revise the DAILy curriculum to make the learning experience more engaging and culturally sustaining for youth

Springfield Public Schools

Springfield, Massachusetts, United States

ChangeMakers Instructor

09/2021-12/2022

- Instructed middle schoolers and high schoolers to assemble and program automated mini-greenhouses with micro:bit
- Supported students to creatively redesign their automated mini-greenhouses to meet their own needs and goals
- Guided students to recognize food justice issues around them and consider how they could contribute to address these issues with automation

Yihong Cheng

• 853-6865-0445 • yhcheng@cityu.edu.mo

Lasell University

Newton, Massachusetts, United States

Lecturer of ED342_344

01/2020-05/2021

- Lectured preK-6 pre-service teachers on teaching science concepts in engaging and equitable ways aligning with national and regional standards
- Facilitated pre-service teachers to design original science curricula that they could directly use at their practicum sites and in their future jobs
- Helped pre-service teachers identify strategies to integrate science concepts into non-STEM disciplines including English language arts, history, physical education, and more
- Introduced pre-service teachers to statistical tools they could use to refine course evaluation tools and develop targeted support based on their students' unique needs

Boston College

Newton, Massachusetts, United States

Teaching Assistant of EESC182

01/2019-05/2019

- Planned lessons that introduced non-STEM major undergraduate students to life-relevant physical computing
- Designed hands-on activities using low-cost and accessible materials
- Guided students to perform experiments that verified various laws of physics and familiarized them with scientific methods

Waltham Public Schools

Waltham, Massachusetts, United States

Afterschool STEM Program Instructor

09/2018-09/2019

- Collaboratively taught afterschool STEM programs at McDevitt Middle School and John F. Kennedy Middle School with 8th grade science teachers
- Designed hands-on learning activities that engaged middle school students in making sense of and applying science concepts, including but not limited to 3D printing, drone and local water sample collecting, and physical computing

TRiO at University of Minnesota, Twin Cities (UMN-TC)

Minneapolis, Minnesota, United States

Academic Support Services Assistant

01/2017-05/2017

- Interviewed first-year, low-income, first-generation students to learn about their experience with integrated learning curricula designed by TRiO at UMN-TC to help them succeed in STEM
- Interviewed instructors of the integrated learning curricula to learn about their perspective on the curricula.
- Conducted statistical analysis of longitudinal shifts in students' academic achievement
- Initiated actionable plans based on findings from the interviews and the statistical analysis to make the academic support program more inclusive and supportive

Minneapolis Community and Technical College (MCTC)

Minneapolis, Minnesota, United States

Accessibility Center Assistant

01/2016-01/2017

- Supported students registered at the accessibility resource center (formerly known as the disability services center) at MCTC with the use of assistive devices and assistive technology tools
- Helped the Chief Director of Diversity at MCTC investigate the extent to which faculty and staff at MCTC were supported by the institution's cultural competence development initiatives through interviews
- Identified key divergences faculty and staff had in conceptualizing cultural competence
- Discovered obstacles encountered by faculty and staff as they tried to access resources for professional development
- Communicated with the leaders of MCTC about findings from the interviews and provided them with suggestions for better supporting all employees

Publications (Published or Accepted)

- [1] Cheng, Y.*, Xiao, X., Jackson, D., Shah, S. A., Abdus-Sabur, F., Hira, A., Zhang, H., & Barnett, M. (2025). Competent but Anxious Smart Greenhouse Makers: Findings from a physical computing project. *Journal of Science Education and Technology*. <https://doi.org/10.1007/s10956-025-10208-1>
- [2] Su, B., Xiao, X., Cheng, Y., Liu, C., & Yang, C. (2025). Trajectories of depressive symptom among college students in china during the COVID-19 pandemic: Association with suicidal ideation and insomnia symptoms. *Suicide and*

Yihong Cheng

• 853-6865-0445 • yhcheng@cityu.edu.mo

Life-Threatening Behavior, 55(5). <https://doi.org/10.1111/sltb.70051>

[3] Xiao, X., Xue, M., & **Cheng, Y.** (2023). Bayesian partial credit model and its applications in science education. *Contemporary Trends and Issues in Science Education*, 57, 77 – 96.

[4] Zhang, H., Lee, I., Ali, S., DiPaola, D., **Cheng, Y.**, & Breazeal, C. (2023). Integrating ethics and career futures with technical learning to promote AI literacy for middle school students: An exploratory study. *International Journal of Artificial Intelligence in Education*, 1-35.

[5] Jackson, D., **Cheng, Y.**, Meng, Q., and Xu, Y. (2022). “Smart” greenhouses and pluridisciplinary spaces: Supporting adolescents’ engagement and self-efficacy in computation across disciplines. *Disciplinary and Interdisciplinary Science Education Research*, 4(1), 1-15.

[6] Jackson, D., & **Cheng, Y.** (2021). Maintaining pluralism when embedding computational thinking in required science and engineering classes with young adolescents. *Computer Science Education*, 1-25. Routledge.

[7] Xiao, X., & **Cheng, Y.** (2021). Movie title keywords: A text mining and exploratory factor analysis of popular movies in the United States and China. *Journal of Risk and Financial Management*, 14(2).

Asante, C. K., Semerjian, A., Xu, Y., Jackson, D., **Cheng, Y.**, Chasen, A., Shah, A., Brett, J., and Broadstone, M. (2021). An integrated STEM and computing curriculum for the human-technology frontier. *Connected Science Learning*, 3(2).

Publications (Under Review)

[1] **Cheng, Y.**, and Xiao, X. (2024). *When non-discriminative items reveal misconceptions about AI: Findings from cognitive interviews*. Revised manuscript under review by Journal of Educational Computing Research.

[2] **Cheng, Y.**, and Xiao, X. (2024). *What AI literacy, What AI concepts: Analysis of an AI concept inventory*. Revised manuscript under review by Education and Information Technologies.

[3] Gu, L., **Cheng, Y.**, Yuan, J., and Wang, C. (2024). *Is psychological help a proprietary for low-capacity graduate students*. Revised manuscript under review by European Journal of Education.

[4] Wang, T., Gu, L., and **Cheng, Y.** (2024). *Multiple institutional logics of talent cultivation in church universities: A case study of the University of Notre Dame*. Revised manuscript under review by Journal of Higher Education Policy and Management.

[5] Xiao, X., and **Cheng, Y.** (2024). *Different genders, different paths to self-efficacy: An analysis of the moderating and mediating effects of environmental factors on the relationship between gender and self-efficacy*. Revised manuscript under review by Journal of General Psychology.

[6] Xiao, X., and **Cheng, Y.** (2024). *Tutorial on Bayesian Growth Mixture Modeling: Applications in reading development and depression*. Revised manuscript under review by Statistical Science.

[7] Xiao, X., Li, Z., Liu, Y., and **Cheng, Y.** (2024). *Identifying sensitive periods for the impact of physical abuse on psychopathology symptoms*. Revised manuscript under review by Development and Psychopathology.

Conference Presentations and Proceedings

[1] **Cheng, Y.**, Zhou, X., Zhang, H., Zheng, R., Moore, K., Perret, B., Pu, G., and Lee, I. *Learning to teach artificial intelligence concepts and ethical issues: A professional development program for middle school teachers*. Presented at Educational Advances in Artificial Intelligence 2022.

[2] Lee, I., Zhang, H., Moore, K., Zhou, X., Perret, B., **Cheng, Y.**, Zheng, R., and Pu, G. (2022). AI Book Club: An innovative professional development model for AI education. In *Proceedings of the 53rd ACM Technical Symposium on Computer Science Education*, 202-208.

[3] Jiang, S., Desportes, K., Bergner, Y., Zhang, H., Lee, I., Moore, K., **Cheng, Y.**, Perret, B., Walsh, B., Guggenheim, A., Dalton, B., Forsyth, S., Yeh, T., Akram, B., Yoder, S., Finzer, W., Chao, J., Rosé, C. P., Payne, W., Castro-Norwood, F., & McDermott, K. (2022). Agents, models, and ethics: Importance of interdisciplinary explorations in AI education. In *Proceedings of the 16th International Conference of the Learning Sciences-ICLS 2022*, pp. 1763-1770.

[4] **Cheng, Y.**, & Jackson, D. (2021). From “in a sleep” to “stayed everyday”: *Engaging students and teachers with micro:bit smart-greenhouses*. In *Proceedings of the 14th International Conference on Computer-Supported Collaborative Learning-CSCL 2021*.

Yihong Cheng

• 853-6865-0445 • yhcheng@cityu.edu.mo

- [5] **Cheng, Y.**, Zhang, H., Jackson, D. W., Lee, I. A., Brown, N. J. S., Szendey, O., Ali, S., and DiPaola, D. (2020). *Raising minoritized middle schoolers' AI career awareness and adaptability: Findings from two online summer camps*. Presented at American Educational Research Association.
- [6] Ali, S., DiPaola, D., Lee, I., Jackson, D., Kiel, J., Beal, K., Zhang, H., **Cheng, Y.**, Breazeal, C. (2021). Adapting K-12 AI learning for online instruction. In *Proceedings of German Journal of Artificial Intelligence 2/2021*.
- [7] **Cheng, Y.** (2019). *Toward culturally competent teacher preparation programs: A literature review of empirical examples*. Presented at Learning Sciences Graduate Student Conference, Chicago, IL, United States.
- [8] Zhang, H., & **Cheng, Y.** (2019). *Interdisciplinary approaches to teaching computational environmental science*. Presented at National Science Foundation STEM+C PI Summit, Washington, DC.