

HAKEOUNG HANNAH LEE

Curriculum Vitae

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EDUCATION

The University of Texas at Austin, Ph.D. in Science, Technology, Engineering, and Mathematics Education, 2025
(*Dissertation: AI-Enhanced Multimodal Activity Mapping: Understanding Group Dynamics Through Verbal, Nonverbal, and Object-Based Interactions in Collaborative Learning*)

The University of Texas at Austin, M.S. in Statistics, 2024

Jeju National University Teachers College, B.Ed. in Elementary Education, 2021

PROFESSIONAL APPOINTMENT

2025 – Present **Assistant Professor of Education, tenure track**
Area: Educational Technology / AI in Education
Department of Curriculum, Instruction, and Special Education
School of Education and Human Development, University of Virginia

PUBLICATIONS

Peer Reviewed Articles

- J7- Lee, H. H., Sung, H., Celedón-Pattichis, S., & Pattichis, M. S. (2026). Toward an inclusive understanding of collaborative learning using MMLA: Exploring multimodal participation dynamics by gender and linguistic diversity. *Learning and Instruction, 102*, 102317. <https://doi.org/10.1016/j.learninstruc.2026.102317> (Special issue on *Implementing multimodal learning analytics (MMLA) in ecological settings for generating actionable insights*). (IF = 4.9; 5-Year IF = 6.4)
- J6- Cantú, E.*, Celedón-Pattichis, S.*, Lecea-Yanguas, J. A.*, Lee, H. H.*, & Pattichis, M. S.* (2025). Translanguaging analysis of multilingual middle school students' authentic mathematics-based computing experiences. *Bilingual Research Journal, 48*(4), 408–428. <https://doi.org/10.1080/15235882.2025.2501802> (*All authors contributed equally to this work and are listed in alphabetical order.) (IF = 1.2; 5-Year IF = 2.6)
- J5- Yeh, C., Reinholz, D., Lee, H. H., & Moschetti, M. (2025). Beyond verbal: A methodological approach to highlighting students' embodied participation in mathematics classrooms. *Educational Researcher, 54*(2), 103–110. <https://doi.org/10.3102/0013189X241310169> (IF = 5.4; 5-Year IF = 7.6)
- J4- Gargroetzi, E., Calvin, S., Lee, H. H., Hertel, M., Hufford, A., Lo, M., Wei, G., Weker, E., & Aguilar, A. (2025). Supporting civic learning in the mathematics classroom: Examples and reflections from teacher inquiry. *The New Educator, 21*(2), 180–203. <https://doi.org/10.1080/1547688X.2025.2459932>
- J3- Pattichis, M. S., Lee, H. H., Celedón-Pattichis, S., & LópezLeiva, C. (2024). Teaching computer programming using mathematics: Examples from middle-school and graduate school. *Springer Nature Computer Science, 5*(8), 1006. <https://doi.org/10.1007/s42979-024-03386-z> (IF = 4.34)
- J2- Lee, H. H., & Gargroetzi, E. (2023). “It’s like a double-edged sword”: Mentor perspectives on ethics and responsibility in a learning analytics-supported virtual mentoring program. *Journal of Learning Analytics, 10*(1), 85-100. <https://doi.org/10.18608/jla.2023.7787> (IF = 4.76; 5-Year IF = 4.8)
- J1- Yoon, S., Kwon, H., Jeon, Y., Lee, Y., Lee, H. H., Lim, D., & Kim, S. (2023). Co-designing human-centered learning analytics: A case study. *Journal of the Korean Association of Information Education, 27*(3), 331-343. <http://dx.doi.org/10.14352/jkaie.2023.27.3.331> (Premier journal for information education research in the Korean regions.)

Refereed Conference Proceedings

- C15- **Lee, H. H.** (2026, June). AI-Enhanced sociocultural, multimodal approaches for equitable collaborative learning: Learning, power, and multimodality. In *General Proceedings of the ISLS Annual Meeting 2026*. International Society of the Learning Sciences.
- C14- **Lee, H. H.**, Lujan, M., Jatla, V., Egala, U., Pattichis, M. S., & Celedón-Pattichis, S. (2026, June). Integrating AI and interaction analysis: A mixed-methods approach to tracing object-based participation in CSCL. In *Proceedings of the 19th International Conference on Computer-Supported Collaborative Learning - CSCL 2026*. International Society of the Learning Sciences.
- C13- **Lee, H. H.**, & Choi, G. W. (2026, June). Speculating, questioning, and interpreting: A mixed-methods study of informal learning on a video-sharing social media platform. In *Proceedings of the 20th International Conference of the Learning Sciences - ICLS 2026*. International Society of the Learning Sciences.
- C12- Ko, E. G., **Lee, H. H.**, Singh, A., Boddy, L., Ford, K., & Huff, E. W., Jr. (2026, April). Toward scalable and responsible integration of course-specific AI tutors: Instructor experiences with a campus-wide platform. In *Proceedings of the 2026 CHI Conference on Human Factors in Computing Systems (CHI '26)*. Association for Computing Machinery. <https://doi.org/10.1145/3772318.3791298> (*The CHI Proceedings are highly selective peer-reviewed publications, widely recognized as journal-equivalent in prestige and as a major venue for disseminating research in computer science and human-computer interaction.)
- C11- **Lee, H. H.** (2025, June). AI-enhanced sociocultural analysis of keyboard access in CSCL: Proxy, gatekeeper, or mediator of intellectual influence? In *General Proceedings of the ISLS Annual Meeting 2025*. International Society of the Learning Sciences.
- C10- **Lee, H. H.** (2025, March). Table dynamics: AI-enhanced analysis of keyboard access and power dynamics in collaborative STEM learning groups. In *Companion Proceedings of the 15th International Conference on Learning Analytics & Knowledge (LAK25)* (pp. 325-331). Society for Learning Analytics Research.
- C9- Borchers, C., Liu, X., **Lee, H. H.**, & Zhang, J. (2024, July). Ethical AIED and AIED ethics: Toward synergy between AIED research and ethical frameworks. In A. M. Olney, I. A. Chounta, Z. Liu, O. C. Santos, & I. I. Bittencourt (Eds.), *Artificial intelligence in education. AIED 2024* (Vol. 2150, pp. 23–34). Springer. https://doi.org/10.1007/978-3-031-64315-6_2
- C8- **Lee, H. H.**, Celedón-Pattichis, S., LópezLeiva, C., Pattichis, M., & Song, Y. (2024, June). Emergent interests to well-developed interests in STEM. In R. Lindgren, T. I. Asino, E. A. Kyza, C. K. Looi, D. T. Keifert, & E. Suárez (Eds.), *Proceedings of the 18th International Conference of the Learning Sciences - ICLS 2024* (pp. 1295–1298). International Society of the Learning Sciences. <https://doi.org/10.22318/icls2024.111198>
- C7- Raza, A., Penuel, W., Ahn, J., Jackson, K., Reinholz, D., Yeh, C., **Lee, H. H.**, Fischer, F., & Maldonado, R. (2024, June). Expansive ways of knowing and improving: Using equity tools and approaches to support equity of participation in learning activities. In R. Lindgren, T. I. Asino, E. A. Kyza, C. K. Looi, D. T. Keifert, & E. Suárez (Eds.), *Proceedings of the 18th International Conference of the Learning Sciences - ICLS 2024* (pp. 1949–1956). International Society of the Learning Sciences. <https://doi.org/10.22318/icls2024.590417>
- C6- Papendieck, A., Azevedo, F. S., & **Lee, H. H.** (2024, June). More-than-human empathizing for science identity, ethical accountability, and solidarity. In R. Lindgren, T. I. Asino, E. A. Kyza, C. K. Looi, D. T. Keifert, & E. Suárez (Eds.), *Proceedings of the 18th International Conference of the Learning Sciences - ICLS 2024* (pp. 2387–2388). International Society of the Learning Sciences. <https://doi.org/10.22318/icls2024.151123>
- C5- Song, Y., Li, C., Xing, W., Li, S., & **Lee, H. H.** (2024, March). A fair clustering approach to self-regulated learning behaviors in a virtual learning environment. In *Proceedings of the 14th Learning Analytics and Knowledge Conference* (pp. 771–778). Association for Computing Machinery. <https://doi.org/10.1145/3636555.3636863>
- C4- Pattichis, M., **Lee, H. H.**, Celedón-Pattichis, S., & LópezLeiva, C. (2023, September). Teaching computer programming with mathematics for generating digital videos and machine learning optimization. In N.

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Tsapatsoulis et al. (Eds.), *Computer analysis of images and patterns: CAIP 2023* (Vol. 14184, Lecture notes in computer science, pp. 222–233). Springer. https://doi.org/10.1007/978-3-031-44237-7_19

- C3- Lee, H. H., Madkins, T. C., & Hwang, W. (2023, June). “I’m not typically the type of person who takes the lead”: Using physical computing to support identity development. In Blikstein, P., Van Aalst, J., Kizito, R., & Brennan, K. (Eds.), *Proceedings of the 17th International Conference of the Learning Sciences - ICLS 2023* (pp. 1446-1449). International Society of the Learning Sciences. <https://doi.org/10.22318/icls2023.784207>
- C2- Gargroetzi, E. C., Calvin, S. L., Lee, H. H., & Hertel, M. E. (2023, June). Learning as emergent practice in the transdisciplinary civic learning collaborative. In Blikstein, P., Van Aalst, J., Kizito, R., & Brennan, K. (Eds.), *Proceedings of the 17th International Conference of the Learning Sciences - ICLS 2023* (pp. 1002-1005). International Society of the Learning Sciences. <https://doi.org/10.22318/icls2023.807409>
- C1- Calvin, S. L., Gargroetzi, E. C., Lee, H. H., & Hertel, M. E. (2023, June). Identity inquiries: From STEAM self-portraits to identity mapping. In Blikstein, P., Van Aalst, J., Kizito, R., & Brennan, K. (Eds.), *Proceedings of the 17th International Conference of the Learning Sciences - ICLS 2023* (pp. 2255-2258). International Society of the Learning Sciences. <https://doi.org/10.22318/icls2023.622417>

Book Chapters

- B2- Lee, H. H. *, & Kwon, H. G.* (2023). Practicing learning analytics and ethics. In J. Moon, G. Choi, H. Bae, & J. Byun (Eds.), *Educational/instructional technology and learning sciences: Korean open access guide*. EdTech Books. <https://doi.org/10.59668/431.13536> (*Authors contributed equally to this work.)
- B1- Lee, H. H. (2020). A vision born in a shabby studio: Enhancing education with technology. In J. Lee, S. Park, & W. Shin (Eds.), *Youth, tell the youth [English translation of the title]* (pp. 270–279). Cheongchul. ISBN 979-11-971870-0-1 (Invited to contribute as a recipient of the Talent Award of Korea. The book achieved *bestseller* status in Korea on November 4, 2020.)

Under Review – Refereed Journal Articles

- JU6- Lee, H. H., Celedón-Pattichis, S., Lujan, M., Jatla, V., Egala, U., & Pattichis, M. S. (major revision; initial submission January 2026). Making multimodal participation visible: Equity-oriented multimodal learning analytics for computer-supported collaborative learning. *International Journal of Computer-Supported Collaborative Learning*.
- JU5- Lee, H. H. (major revision submitted February 2026; initial submission November 2025). Responsible AI in education: Multilingual, multimodal, and relational futures. *Teachers College Record*.
- JU4- Lee, H. H., Lujan, M., Jatla, V., Egala, U., Pattichis, M. S., & Celedón-Pattichis, S. (under review; initial submission February 2026). Activity Mapping: A sociocultural approach to developing an AI-based video analysis system for tracking and visualizing multimodal participation in collaborative learning. *Journal of Learning Analytics*.
- JU3- Lee, H. H., & Celedón-Pattichis, S. (revise and resubmit submitted February 2026; initial submission September 2024). Toward an improved understanding and modeling of interest development. *Cognition and Instruction*.
- JU2- Cantú, E., Celedón-Pattichis, S., Pattichis, M. S., Lee, H. H., Johnson, A. R., Tovar, I., & LópezLeiva, C. A. (under review). “¿Qué funciona?”: Translanguaging, epistemic agency, and idea crafting for computer programming. *Computer Science Education*.
- JU1- Song, Y., Li, C., Xing, W., Li, S., Lee, H. H., Tan, Y., Shaffer, D. W., & Ma, Y. (major revision submitted October 2025). Using fair AI to uncover the behavioural patterns of self-regulated learning in a virtual learning environment. *Educational Technology & Society*.

Under Review – Book Chapters

- BU1- Lee, H. H., Celedón-Pattichis, S., Cantú, E., Pattichis, M. S., & LópezLeiva, C. (under review; submitted March 2026). Multilingual, multimodal, and co-designed STEM learning: Centering multilingual youth. In J. Y. Ma & E. Tan (Eds.), *The Oxford handbook of justice-oriented STEM education*. Oxford University Press.

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FELLOWSHIPS AND GRANTS

Highlighted Scholarships and Fellowships

Semi-Finalist, NAEd/Spencer Dissertation Fellowship, National Academy of Education/Spencer Foundation (<i>Selected as one of 63 semi-finalists from over 400 applicants across more than 100 institutions; Respectfully withdrew from the final selection process in light of faculty appointment at the University of Virginia</i>)	2025
University Graduate Continuing Fellowship (Outstanding Graduate Research Fellowship), The University of Texas at Austin, \$64,170	2025
Michael B. Salwen Scholarship, The Korean-American Educational Researchers Association	2025
ISLS Doctoral Consortium Fellow, The International Society of the Learning Sciences (ISLS)	2025
SoLAR LAK Doctoral Consortium Fellow, The Society for Learning Analytics Research (SoLAR)	2025
AERA Learning Sciences/Advanced Technologies for Learning SIG Mentoring Program Travel Grant (<i>Selected</i>)	2025
Graduate School Professional Development Awards, The University of Texas at Austin, \$1,440	2025
Long Joe and Teresa Graduate Fellowship, STEM Education, The University of Texas at Austin, \$1,000	2024 – 2025
Tenant Advisory Board (TAB) Award, The University of Texas at Austin, \$6,300	2024 – 2025
International Education Fee Scholarship (IEFS), The University of Texas at Austin, \$5,000	2024
AERA Division C Graduate Student Seminar Travel Grant (<i>Selected</i>), American Educational Research Association	2024
College of Education C&I/STEM Faculty Student Collaborative Award, The University of Texas at Austin, \$1,550	2023 – 2024
Addison E. Lee Endowed Fellowship, The University of Texas at Austin, \$3,000	2022 – 2023
ISLS Annual Meeting 2023 Travel Grant (<i>Selected</i>), The International Society of the Learning Sciences (ISLS)	2023
SoLAR LAK Conference Scholarship (<i>Selected</i>), The Society for Learning Analytics Research (SoLAR)	2022
2022 Carnegie Mellon University Simon Initiative’s LearnLab Summer School Full Scholarship	2022
The Korean Government Scholarship for Study Overseas, The Korean Ministry of Education, \$150,000	2021 – 2024
Graduate School Full Package Recruitment Fellowship, The University of Texas at Austin, \$50,785	2021 – 2022
Texas New Scholars Fellowship, The University of Texas at Austin, \$2,000	2021 – 2022
Gwanjeong Education Foundation Scholarship, Gwanjeong Education Foundation, \$20,000	2019 – 2021
Hyundai Asan Foundation Student of Academic Excellence Scholarship, Hyundai, \$4,363 (<i>declined offer</i>)	2019 – 2021
JDC Global Internship Scholarship, Jeju Free International City Development Center and JNUE, \$5,000+	2020
Incheon Human Resources Development and Scholarship Foundation Scholarship, \$910	2020
Overseas Language Training Scholarship, Jeju Special Self-Governing Province, \$7,920	2018 – 2019
Talent Award of Korea Scholarship, The Korean Ministry of Education, \$2,275	2019

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Halla Foreign Language Excellence Scholarship, JNUE, \$910	2018
Dr. Si-hyang Lee Endowed Academic Excellence Scholarship, JNUE, \$1,820	2018
Scholarship Received for Administration Assistance, JNUE, \$4,000	2017 – 2020
Government Scholarship to the Liberal Arts Student of Academic Excellence, The Korean Ministry of Education, \$12,000	2017 – 2019
CK-1 SW-based Faculty Training Organization Scholarship, JNUE, \$1,300	2017 – 2018
Academic Excellence Scholarship (College Scholastic Ability Test (CSAT)), JNUE, \$500	2017

Research Grants – Funded

Multimodal Futures: Responsible AI for Equitable, Multilingual STEM Education Across Global Contexts

Sponsor: University of Virginia Center for Global Inquiry and Innovation

Program: Global Programs of Distinction Grants

Amount: \$70,000

Period of Performance: 08/01/2026 – 07/31/2027

Role: Principal Investigator

Multimodal STEM+AI Classrooms: A Sociocultural Inquiry into Participatory Design for Collaborative Learning

Sponsor: University of Virginia

Program: IDEAs (Innovative, Developmental, Exploratory Awards)

Amount: \$10,000

Period of Performance: 03/01/2026 – 03/31/2027

Role: Principal Investigator

Equity Learning Analytics: A Multimodal Approach to Understanding Group Dynamics through Verbal, Nonverbal, and Object-Based Interactions in Collaborative Learning

Sponsor: Learnest

Program: Learnest Ethical AI in Education Fellowship

Amount: \$2,000

Period of Performance: 01/01/2024 – 05/31/2024

Role: Principal Investigator

Optimizing Academic Success and Well-being Through AI: An Interdisciplinary Longitudinal SEM (Structural Equation Modeling) Study

Sponsor: The University of Texas at Austin Moody College of Communication

Program: Health Communication Scholars Program

Amount: \$2,500

Period of Performance: 05/01/2024 – 06/01/2025

Role: Co-Principal Investigator (PI: Fan Wang, The University of Texas at Austin)

An In-Depth Investigation of Student Interest Growth in STEM

Sponsor: The University of Texas at Austin, Department of STEM Education

Program: Graduate Student Research Scholarship

Amount: \$500

Period of Performance: 02/28/2024 – 05/31/2024

Role: Principal Investigator

Responsible AI: Why did mentors hide from mentees they had seen their mentees' learning analytics data? ([Press release](#))

Sponsor: The University of Texas at Austin, Good Systems Ethical AI at UT Austin

Program: Good Systems Graduate Fellowship Award

Amount: \$6,000

Period of Performance: 06/01/2022 – 08/31/2022

Role: Principal Investigator

SELECTED HONORS AND AWARDS

Youth Green Growth Award of Korea (*Minister of the Korean Ministry of Gender Equality and Family Award*), 12/2021

- The most prestigious national award in Korea recognizing outstanding achievements in youth educational initiatives. ([Press release](#))

Talent Award of Korea (*Minister of the Korean Ministry of Education Award*), 12/2019

- The most prestigious national award in Korea given annually by the South Korean government to 100 young talents representing the Republic of Korea. ([Press release](#))

Gwanjeong Education Scholarship Foundation Honor Society. Lifetime member.

- Awarded by the largest and most prestigious scholarship foundation in Asia.

Korea Academy of Government-supported Scholars (KAGS). Lifetime member.

- Comprised of full scholarship recipients from the Korean Government Scholarship Program for Study Overseas (KGSPSO), the most prestigious scholarship program in Korea for doctoral degrees.

2018 National Software Education Edu-thon Contest, 1st prize (*Minister of the Korean Ministry of Science and ICT Award*), 12/2018

- The most prestigious national Science and ICT award in Korea. ([Press release](#))
- Developed a collaborative physical computing curriculum for K-12 students, which was later widely featured^{T1,T2} and implemented nationwide.

The 9th Annual National Universities of Education Best Classroom Project Contest, 2nd prize (President of National Universities of Education President's Council Award), 11/2019

2018 National IGT Multicultural Education Project Contest, 2nd prize (President of the IGT Committee Award), Ministry of Education, South Korea, 11/2018

- **Lee, H.**, Shin, M., You, H., Jang, S. (2018). Analysis of the Current Status of Multicultural Gifted Education and Development of Educational Program. *IGT Multicultural Education Research*. p.120-234.

The 38th Annual Baekrok Academic Research Award, 3rd prize, 12/2018

- Lee, H. (2018). Development of Issue Spread Teaching-Learning Model for Developing Countries.

The 3rd Jeju International Development Cooperation WEEK International Development Idea Award, 3rd prize (President of Jeju International Development Cooperation Award), 11/2018 ([Press release](#))

- Lee, H. (2018). Development of Sustainable Education Program for the Marginalized Communities in Developing Countries.

The 3rd Jeju International Development Cooperation WEEK Overseas Volunteer Work Award, 3rd prize (President of Jeju International Development Cooperation Award), 11/2018 ([Press release](#))

INVITED PRESENTATIONS

T14- Pattichis, M. S., Panayides, A., **Lee, H. H.**, & Celedón-Pattichis, S. (2026, October 25-28). *Integrating Secondary School Mathematics with Artificial Intelligence and Machine Learning through Python Programming and Digital Image Processing* [Invited presentation]. 2026 Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, United States.

T13- **Lee, H. H.** (2026, April 8). *Job Market: Learning Science, STEM/AI in Education* [Invited mentoring session]. 2026 Korean American Educational Researchers Association (KAERA) Conference, Los Angeles, CA, United States.

T12- **Lee, H. H.** (2025, August 22). *Navigating the U.S. Faculty Job Market* [Invited talk]. 2025 Korean-American Educational Researchers Association (KAERA) Webinar, The Korean-American Educational Researchers Association, Virtual Event.

T11- **Lee, H. H.** (2025, July 26). *Global Perspectives on SW-AI-Based Education: Learning Analytics Insights into Data Collection and Standardization* [Invited talk]. 2025 Expert Forum of Private Sector, Government,

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Academia, Industry, and Research Institutes for the Advancement of AI in Education and Software Education, Korea University, South Korea. (virtually presented).


- T10- **Lee, H. H.** & Choi, G. (2024, December 13). *A Multilevel Analysis of YouTube Comments: The Case of K-Pop Music Videos* [Invited talk]. 2024 the Korean Edutech / Learning Sciences Researcher Network (KELS) Colloquium Innovation in Digital/Interactive Learning Environment Research and Practice (IDLE) 16th Seminar, Virtual Event.
- T9- Gargroetzi, E., & **Lee, H. H.** (2024, October 25). *Interrogating and Innovating Our Mathematics Classrooms Toward Just Civic World Building* [Invited talk]. STEM Education Seminar, Texas State University, San Marcos, TX, USA.
- T8- **Lee, H. H.** (2024, May 31). *Equity Learning Analytics: A Multimodal Approach to Understanding Group Dynamics through Verbal, Nonverbal, and Object-Based Interactions in Collaborative Learning* [Invited talk]. Learnest Inaugural Ethical AI in Education Colloquium at Stanford University, CA, USA. (Invited to give a presentation as a fellowship recipient)
- T7- **Lee, H. H.**, Borchers, C., Liu, X., & Zhang, J. (2024, May 31). *Ethical AIED and AIED Ethics: Toward Synergy Between AIED Research and Ethical Frameworks* [Invited talk]. Learnest Inaugural Ethical AI in Education Colloquium at Stanford University, CA, USA. (Invited to give a presentation as a fellowship recipient)
- T6- Yeh, C., & **Lee, H. H.** (2023, September 1). *(Re)Development of a Practical Measure to Reconceptualize Ability, Normativity, and Access in Mathematics Education* [Invited talk]. STEM Education Seminar, Texas State University, San Marcos, TX, USA.
- T5- **Lee, H. H.**, & Gargroetzi, E. (2023, April). *Learning Analytics in a Mentoring Context: Through a Sociocritical Lens* [Invited poster presentation]. 2023 Good Systems Annual Symposium: Shaping the Future of Ethical AI, Austin, TX, USA. [\[Link\]](#)
- T4- **Lee, H. H.** (2022, December 3). *Mentor Perspectives on Ethics and Responsibility in a Learning Analytics-Supported Virtual Mentoring Program* [Invited talk]. Korean Edutech / Learning Sciences Researcher Network (KELS) 2022 December Webinar Series – Learning Analytics Chapter, Virtual Event.
- T3- **Lee, H. H.** (2022, September 28). *Responsible AI: Why did mentors hide from mentees they had seen their mentees' learning analytics data?* [Invited presentation]. 2022 Good Systems Graduate Fellowship Lightning Talks, Austin, TX, USA. (Invited to give a presentation as a fellowship recipient)
- T2- **Lee, H. H.** (2022, April 12). *Theories and Trends in STEM/STEAM Education* [Invited talk]. 2022 STEAM Education Leading School STEAM Education Experts Lecture Series, Chungcheongnam-do, South Korea (virtually presented).
- T1- **Lee, H.**, & Ko, H. (2018). *Software Edu-thon for Reinforcement of Preliminary Teachers' Capacity: SW Education 'Physical Computing with Micro:bit' Project Design* [Invited talk]. 2018 National Software Education Conference, Seoul, South Korea. (Invited to give a presentation as a national award recipient)

SELECTED REFEREED CONFERENCE PRESENTATIONS¹

- P19- Kwon, H. G., Song, Y., **Lee, H. H.**, Eom, J., Lee, Y., & Sung, J. (2026, June). *Designing modular core courses and completion tracks for higher education in the AI era: A design-development research approach integrating LLM-based multi-persona simulation* [Conference presentation]. International Conference on Learning Sciences and Educational Innovation (ICOLSEI 2026), Seoul, South Korea.
- P18- **Lee, H. H.**, Lujan, M., Jatla, V., Egala, U., Pattichis, M. S., Celedón-Pattichis, S., & Cantú, E. (2026, April). *Multimodal participation analysis in CSCL through AI-enhanced Activity Mapping and screen recording video analysis systems* [Conference presentation]. The Annual Meeting of the American Educational Research Association (AERA 2026), Los Angeles, CA, United States.

¹ Presentations associated with refereed conference proceedings listed above are excluded from this section to avoid duplication.

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- P17- **Lee, H. H.**, Lujan, M., Jatla, V., Egala, U., Pattichis, M. S., Celedón-Pattichis, S., & Cantú, E. (2026, April). *Multimodal participation analysis in CSCL through AI-enhanced Activity Mapping and screen recording video analysis systems* [Conference presentation]. The Annual Meeting of the American Educational Research Association (AERA 2026), Los Angeles, CA, United States.
- P16- **Lee, H. H.**, Calvin, S. L., Love, M., Gargroetzi, E. C., & Gómez Marchant, C. N. (2025, November). *Pedagogical zines as alternative tools for academic communication and engagement in STEM education* [Conference presentation]. The School Science and Mathematics Association 124th Annual Convention, Fort Worth, TX, United States.
- P15- **Lee, H. H.**, Celedón-Pattichis, S., Jatla, V., & Pattichis, M. S. (2025, April). *Exploring keyboard interactions and power dynamics in collaborative groups using AI for tracking human activity* [Conference presentation]. The Annual Meeting of the American Educational Research Association (AERA 2025), Denver, CO, United States.
 **Nominated for the Advanced Technologies for Learning/Learning Sciences (ATL/LS) Special Interest Groups' Best Student Paper Award.**
- P14- Cantú, E., **Lee, H. H.**, Celedón-Pattichis, S., Pattichis, M. S., & LópezLeiva, C. A. (2025, April). “Hello Michael rat 🐀 🐁”: *Memetics and formulaic language for understanding authority and authorship* [Conference presentation]. The Annual Meeting of the American Educational Research Association (AERA 2025), Denver, CO, United States.
- P13- **Lee, H. H.** (2025, April). *AI-enhanced sociocultural analysis of keyboard access in collaborative computer science learning using 3D convolutional neural networks* [Conference presentation]. 2025 Korean American Educational Researchers Association (KAERA) Conference, Denver, CO, United States.
- P12- Calvin, S. L.,* & **Lee, H. H.*** (2025, March). *Empowering students through a quantified community approach: Leveraging student-led data on classroom community for STEAM learning* [Conference presentation]. The 52nd Annual Conference of the Research Council on Mathematics Learning (RCML 2025), College Station, TX, United States. (*Authors contributed equally to this work.)
- P11- Weker, E., Hufford, A., Koeffler, K., Suura, K., Bence, J., Wei, G., Hertel, M., **Lee, H. H.**, Calvin, S., & Gargroetzi, E. (2024, June). *Who Am I? Who Are You? Who Are These Kids!? Building Student Identity and Self-confidence* [Conference presentation]. The 2024 NCTE-NCTM Joint Conference for Elementary Literacy and Mathematics, New Orleans, LA, United States.
- P10- **Lee, H. H.**, Celedón-Pattichis, S., Pattichis, M. S., LópezLeiva, C. A., & Cantú, E. (2024, April). *Integrating Computer Science and Mathematics for Enhanced Learning Using Object-oriented Programming and Robotics: Mixed Methods* [Conference presentation]. The Annual Meeting of the American Educational Research Association (AERA 2024), Philadelphia, PA, United States. <https://doi.org/10.3102/2110022>
- P9- **Lee, H. H.**, Yeh, C., & Reinholz, D. (2024, April). *Beyond Verbal: A Methodological Approach for Capturing Embodied Student Participation in Mathematics Classrooms* [Conference presentation]. The Annual Meeting of the American Educational Research Association (AERA 2024), Philadelphia, PA, United States. <https://doi.org/10.3102/2107045>
- P8- Papendieck, A., Azevedo, F. S., & **Lee, H. H.** (2024, April). *Reasoning as Rivers: More-Than-Human Empathizing in Science Identity Work* [Conference presentation]. Presented in a symposium session “Connection With More-Than-Human Participants in Science Learning” with Parekh, P., Polman, J. L., Shapiro, R. B., Pugh, P., Scipio, D. A., Pierson, A., Brady, C., Lee, S. J., Papendieck, A., Azevedo, F. S., & Lee, H. H. at the Annual Meeting of the American Educational Research Association (AERA 2024), Philadelphia, PA, United States. <https://doi.org/10.3102/2107724>
- P7- Song, Y., Li, C., Xing, W., **Lee, H. H.**, Li, S., & Ma, Y. (2024, April). *Fairness-Aware Behavioral Clustering for Self-regulated Learning in Virtual Learning Environments* [Conference presentation]. The Annual Meeting of the American Educational Research Association (AERA 2024), Philadelphia, PA, United States.

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- P6- Lee, H. H. (2024, April). *An In-Depth Investigation of Student Interest Growth in STEM* [Conference presentation]. 2024 Korean American Educational Researchers Association (KAERA) Conference, Philadelphia, PA, United States.
- P5- Lee, H. H., Celedón-Pattichis, S., Pattichis, M. S., Johnson, A. R., Cantú, E., Tovar, I., & LópezLeiva, C. A. (2023, April). *Knowing and enjoying: Expanding Latinx students' experiences with an integrated computer programming and mathematics curriculum* [Conference presentation]. The Annual Meeting of the American Educational Research Association (AERA 2023), Chicago, IL, United States. <https://doi.org/10.3102/2012330>
- P4- Johnson, A. R., Celedón-Pattichis, S., Pattichis, M. S., Lee, H. H., Cantú, E., Tovar, I., & LópezLeiva, C. A. (2023, April). *Can I be a mathematician and a computer programmer?: Identity building through moments of playful talk* [Conference presentation]. The Annual Meeting of the American Educational Research Association (AERA 2023), Chicago, IL, United States. <https://doi.org/10.3102/2009419>
- P3- Cantú, E., Celedón-Pattichis, S., Pattichis, M. S., LópezLeiva, C. A., Johnson, A. R., Lee, H. H., & Tovar, I. (2023, April). “¿Qué funciona?”: *Translanguaging, epistemic agency, and storytelling for the authoring of ideas in computer science* [Conference presentation]. The Annual Meeting of the American Educational Research Association (AERA 2023), Chicago, IL, United States. <https://doi.org/10.3102/2011070>
- P2- Celedón-Pattichis, S., Tovar, I. O., Cantú, E., Johnson, A., Lee, H. H., LópezLeiva, C. A., & Pattichis, M. S. (2023, February). *Middle school bilinguals' use of translanguaging to engage with algebraic thinking and computer programming* [Conference presentation]. The 52nd Annual Meeting of the National Association for Bilingual Education Research and Evaluation SIG, Portland, OR, USA.
- P1- Yu, C., Aufzien, E., Lee, H. H., Zhou, J. J., & Ananth, S. (2022, September). *Quest2Learn: An Accessible Platform for Lab Science Education* [Conference presentation]. Digitally Engaged Learning Conference (DEL 2022), Virtual Event.

TEACHING

Instructor

- | | |
|---|---------------------------|
| Technology, Learning Systems, & Culture (EDIS 7076) , The University of Virginia, USA. | Spring 2026 |
| Instructional Technology (EDIS 7010) , The University of Virginia, USA. | Fall 2025/
Summer 2026 |
| Developing Learning Analytics Tool for Literacy Education , The Seoul Metropolitan Office of Education, South Korea. Invited to co-design and lead a professional development workshop series. | Fall 2022 |
| Artificial Intelligence (AI) Camp: Machine Learning from a Social Science Perspective , The University of Seoul, South Korea. Invited to co-design and lead a micro-degree course series. | Summer 2022 |

Assistant Instructor (Instructor of Record)

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|---|-------------|
| Year 1: Essentials - PILLARS Cells to Populations Course (MED 186MD) , Dell Medical School, The University of Texas at Austin. | Summer 2023 |
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Teaching Assistant

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| Knowing & Learning in Mathematics and Science (EDC 365C/UTS 350) , College of Education/College of Natural Sciences, The University of Texas at Austin | Fall 2024/
Spring 2025 |
| Mathematics Methods (EDC 370E) , College of Education, The University of Texas at Austin | Spring 2023 |

Teacher, PK-12 Level

- | | |
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| Licensed Teacher (Elementary School; Active), Certified by the Korean Ministry of Education | 2021 |
| Volunteer Teacher, Mackay Memorial College (Secondary School), Kampala, Uganda. | 2018 |
| Volunteer Teacher, The Giving Tree Children's Library - Kansanga , Kampala, Uganda. | 2018 |

Guest Lecturer

- G8- Lee, H. H. (2026, January 21). *AI in STEM teaching*. Guest lecture in EDIS 5051: Teaching Science in Secondary Schools II (undergraduate level course), University of Virginia, VA, USA.

HAKEOUNG HANNAH LEE

- G7- Lee, H. H. (2026, January 14). *The Use of Speech-to-Text Recognition in Qualitative Research*. Guest lecture in EDC 388R: Case Study (graduate level course), University of Texas at Austin, TX, USA.
- G6- Lee, H. H. (2025, January 15). *Leveraging Transcription AI for Qualitative Research*. Guest lecture in EDC 388R: Case Study (graduate level course), University of Texas at Austin, TX, USA.
- G5- Lee, H. H. (2024, October 29). *Navigating Graduate School and Pathways Beyond*. Guest speaker in STM 385: Knowing and Learning in STEM Ed (graduate level course), University of Texas at Austin, TX, USA.
- G4- Lee, H. H. (2024, October 3). *Toward an equitable multimodal learning analytics approach to understanding group dynamics through verbal, nonverbal, and object-based interactions in collaborative learning*. Guest lecture in OILS 604: Learning Analytics (graduate level course), University of New Mexico, NM, USA.
- G3- Lee, H. H. (2024, February 26). *Technology & communication*. Guest lecture in CMS 306M: Professional Communication Skills (undergraduate level course), University of Texas at Austin, TX, USA.
- G2- Lee, H. H. (2024, January 24). *Mastering qualitative analysis: A guide to qualitative analysis, transcription techniques, and analytical approaches*. Guest lecture in EDC 388R: Case Study (graduate level course), University of Texas at Austin, TX, USA.
- G1- Lee, H. H. (2023, August 25). *Crafting effective interview questions*. Guest speaker in UGS 303: Music, Identity and Difference (undergraduate level course), University of Texas at Austin, TX, USA.

MENTORING AND ADVISING

Ph.D./Ed.D. Advisees

1. Jia Lu, Ed.D. in Curriculum & Instruction, 2030 (anticipated), University of Virginia.

M.Ed. Advisees

1. Luke William Haynes, M.Ed. in Curriculum & Instruction, 2028 (anticipated), University of Virginia.
2. Jessie Booth, M.Ed. in Curriculum & Instruction, 2028 (anticipated), University of Virginia.
3. Nache Brown, M.Ed. in Curriculum & Instruction, 2028 (anticipated), University of Virginia.
4. Lucia Calero, M.Ed. in Curriculum & Instruction, 2028 (anticipated), University of Virginia.
5. Rebekah Crump, M.Ed. in Curriculum & Instruction, 2028 (anticipated), University of Virginia.
6. Abdellah Joundan, M.Ed. in Curriculum & Instruction, 2028 (anticipated), University of Virginia.
7. Cielo Lopez Garcia, M.Ed. in Curriculum & Instruction, 2027 (anticipated), University of Virginia.
8. Lucia Lynx Lee Calero, M.Ed. in Curriculum & Instruction, 2028 (anticipated), University of Virginia.
9. Jaxon Skylar Sanford, M.Ed. in Curriculum & Instruction, 2028 (anticipated), University of Virginia.
10. Destiny Alexis Leung, M.Ed. in Curriculum & Instruction, 2028 (anticipated), University of Virginia.
11. Elizabeth Jackson Briones, M.Ed. in Curriculum & Instruction, 2028 (anticipated), University of Virginia.
12. Karla M. Martinez, M.Ed. in Curriculum & Instruction, 2028 (anticipated), University of Virginia.
13. Aaron George, M.Ed. in Curriculum & Instruction, 2027 (anticipated), University of Virginia.
14. Erick Emmanuel Mendoza Enciso, M.Ed. in Curriculum & Instruction, 2027 (anticipated), University of Virginia.
15. Gillian Elizabeth Ashman, M.Ed. in Curriculum & Instruction, 2027 (anticipated), University of Virginia.
16. Mandy Christine Ballingall, M.Ed. in Curriculum & Instruction, 2027 (anticipated), University of Virginia.
17. Alan Kessler, M.Ed. in Curriculum & Instruction, 2027 (anticipated), University of Virginia.
18. Bailey Joseph Wethman, M.Ed. in Curriculum & Instruction, 2027 (anticipated), University of Virginia.
19. Rachel Anne Derksen Jinks, M.Ed. in Curriculum & Instruction, 2027 (anticipated), University of Virginia.

HAKEOUNG HANNAH LEE

- 20. Andrea Vinikoff, M.Ed. in Curriculum & Instruction, 2027 (anticipated), University of Virginia.
- 21. Tessa Lynn Smith, M.Ed. in Curriculum & Instruction, 2026 (anticipated), University of Virginia.
- 22. Kevin Linwood Shaw, M.Ed. in Curriculum & Instruction, 2026 (anticipated), University of Virginia.
- 23. Grace Hayes Blanks, M.Ed. in Curriculum & Instruction, 2026 (anticipated), University of Virginia.
- 24. Daniel Stefano Ulerio, M.Ed. in Curriculum & Instruction, 2026 (anticipated), University of Virginia.
- 25. Kaleigh Joy Landers, M.Ed. in Curriculum & Instruction, 2026 (anticipated), University of Virginia.
- 26. Yewon (Lauren) Lee, M.Ed. in Curriculum & Instruction, 2026 (anticipated), University of Virginia.
- 27. Dan Papsidero, M.Ed. in Curriculum & Instruction, 2026 (anticipated), University of Virginia.
- 28. Alex Michael Donley, M.Ed. in Curriculum & Instruction, 2026 (anticipated), University of Virginia.
- 29. Alexandra Leanora Dolinsky, M.Ed. in Curriculum & Instruction, 2025, University of Virginia.
- 30. Jennifer Lynn McCune, M.Ed. in Curriculum & Instruction, 2025, University of Virginia.

Doctoral Dissertation/Capstone Committees

- 1. Christopher Alan Weatherly, Ed.D. in Curriculum & Instruction, 2027 (anticipated), University of Virginia.

ACADEMIC SERVICE

Academic Conferences

American Educational Research Association (AERA), Reviewer	
Division C - Learning and Instruction - Section 1e: Engineering and Computer Science	2024 – 2025
SIG-Advanced Technologies for Learning	2024 – Present
SIG-Learning Sciences	2023 – Present
SIG-Data-Driven Decision Making in Education	2023 – 2024
Division C - Learning and Instruction - Section 3b: Technology-Based Environments	2023 – 2024
International Conference of the Learning Sciences (ICLS), Reviewer	2022 – Present
International Conference of Computer-Supported Collaborative Learning (CSCL), Reviewer	2022 – Present
Data Science Education K-12: Research to Practice (DSE-K12), Reviewer	2023 – 2024
Computer Analysis of Images and Patterns (CAIP), Reviewer	2025 – Present
International Conference on Learning Analytics & Knowledge (LAK), Reviewer	2025 – Present
International Conference on Artificial Intelligence in Education (AIED), Reviewer	2026 – Present
American Educational Research Association (AERA), Divison C GSC PD Coordinator	2024 – 2025
American Educational Research Association (AERA), Divison C Communications Committee	2025 – Present
Korean-American Educational Researchers Association (KAERA), Mentoring Committee	2025 – 2028

Peer Reviewed Academic Journals, Reviewer

International Journal of STEM Education	2023 – Present
Educational Researcher	2025 – Present
Discover Education	2025 – Present
Discover Sustainability	2026 – Present
Educational Technology Research and Development	2026 – Present
Humanities and Social Sciences Communications	2026 – Present
AI & Society	2026 – Present

The Society of Technology for Education and Learning Analytics (STELA)

Co-founder, Board Member, Director of Research 2020 – Present

I co-founded STELA, a nonprofit organization dedicated to driving educational innovation through technology within and beyond South Korea. We lead a community of over 300 educational practitioners and researchers. We collaborate with educators, researchers, companies, higher education institutions, and government officials to explore and implement strategies for enhancing PK-12 education through technology and learning analytics.

HAKEOUNG HANNAH LEE

Korean Edutech / Learning Sciences Researchers Network (**KELS**)

Board Member, Communications Director

2023 – 2026

Chair

2026 – Present

KELS is an international academic network of more than 400 scholars in Educational Technology and Learning Sciences, connecting Korean and Korean American researchers across the United States, South Korea, and other global institutions. Since 2026, I have served as Chair of this community, promoting scholarly exchange and interdisciplinary collaboration.

UNIVERSITY SERVICE

School of Education and Human Development Service

Panelist, Youth and Social Innovation Mid-point Presentations

2025

Invited Contributor, EHD AI Strategy Summit

2026

Department of Curriculum, Instruction and Special Education Service

Admissions Committee, Ed.D. in Curriculum & Instruction

2026 – Present

Admissions Committee, M.Ed. in Curriculum & Instruction

2025 – Present

Adjunct Instructor Coordination, M.Ed. in Curriculum & Instruction (Educational Technology)

2026 – Present

Program-Level Curriculum Revision, M.Ed. in Curriculum & Instruction (Educational Technology)

2025 – 2026

SELECTED COMMUNITY SERVICE & LEADERSHIP

2024 – 2026 *Collaborator*, Learnest

2024 – 2025 *Secretary*, University Housing and Dining Tenant Advisory Board, UT Austin

2022 – 2024 *Vice President*, The Korean Student Association at the University of Texas at Austin

2021 *Trainee*, LikeLion Artificial Intelligence, Seoul, Korea.

2020 *Intern*, United Nations New York and World Information Transfer, NY, USA.

PROFESSIONAL MEMBERSHIPS

American Educational Research Association (AERA)

Division C – Learning and Instruction

SIG – Learning Sciences

SIG – Advanced Technologies for Learning

International Society of the Learning Sciences (ISLS)

The Society for Learning Analytics Research (SoLAR)

The International AI in Education Society (IAIED)

Association for Computing Machinery (ACM)

National Council of Teachers of Mathematics (NCTM)

CERTIFICATES

Teacher's Certificate (Elementary School Teacher), Certified by the Korean Ministry of Education (Feb 2021)

Inclusive Course Design, The University of Texas at Austin (Aug 2024)

LearnLab Simon Initiative Summer School Certificate, EDM Track, Carnegie Mellon University (July 2022)

TECHNICAL STRENGTHS

Knowledge Base Video Analysis, Machine Learning, Neural Networks, Web Development

Libraries and Tools Pytorch, Tensorflow, Keras, Pandas, Numpy, Docker, Git

Programming Languages *Scripting and libraries* Python, MATLAB, R, C++

Web designing HTML, MYSQL, JavaScript, CSS