Stanford



Victor R. Lee

Khosla Family Professor

Graduate School of Education

Curriculum Vitae available Online

CONTACT INFORMATION

- **Admin. Support**

  Sylvia Cardenas

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Bio

BIO

Victor R. Lee is the Khosla Family Professor in the Graduate School of Education at Stanford University and is faculty lead for the Stanford Accelerator for Learning's initiative on AI and Education. Through his research, he asks what future-facing STEM knowledge, tools, and practices are important to know to enable active participation and critical engagement with our increasingly digitally-infused lives. He then uses the tools of educational design research to create examples for how we could get there. Currently, this involves researching and designing learning experiences and resources for data literacy, K-12 data science education, and artificial intelligence literacy for both students and teachers. He also has maintained a portfolio of research related to elementary computer science education, maker education, and science cognition. His research is most often done through research-practice partnerships and involves design, implementation, analysis, and continual revision of new learning experiences in actual learning settings (such as schools, districts, or libraries). Lee has co-authored multiple national reports for the National Research Council related to computing and data in education. His work has been featured in the New York Times, CNN, Forbes, Politico, and other national media outlets.

Lee completed his undergraduate studies at UC San Diego with emphasis in cognitive science, human computer interaction, and mathematics. He earned his doctorate in Learning Sciences at Northwestern University where he was supported for several years through a fellowship with the NSF-funded Center for Curriculum Materials in Science. Since leaving the midwest and beginning his professional academic career, he has received the National Science Foundation CAREER award, the Jan Hawkins Award, a post-doctoral fellowship from the National Academy of Education and the Spencer Foundation, and various best paper awards. His book, Learning Technologies and the Body (published by Routledge), is the first compendium of current research of embodied technologies for learning. With Abigail Phillips, he published, Reconceptualizing Libraries: Perspectives from the Information and Learning Sciences (2018). His most recent book, released in 2025, is Advancing Data Science Education in K-12. He is a past-president and elected fellow of the International Society of the Learning Sciences.

ACADEMIC APPOINTMENTS

- Professor, Graduate School of Education
- Faculty Affiliate, Institute for Human-Centered Artificial Intelligence (HAI)

ADMINISTRATIVE APPOINTMENTS

- Faculty Lead, AI + Education, Stanford Accelerator for Learning, (2022- present)

- Associate Professor, Department of Instructional Technology & Learning Sciences,, Utah State University, Logan, (2015-2019)
- Assistant Professor, Department of Instructional Technology & Learning Sciences, Utah State University, Logan, (2009-2015)

HONORS AND AWARDS

- Distinguished Development Award, Association for Educational Communications and Technology (2023)
- Fellow, International Society of the Learning Sciences (2022)
- Fellow, International Society for Design and Development in Education (2021)
- Outstanding Research Award, Council for Technology & Engineering Teacher Education (2018)
- Postdoctoral Fellowship, National Academy of Education/Spencer Foundation (2014)
- Jan Hawkins Award, American Educational Research Association (2013)
- CAREER Award, National Science Foundation (2011)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Expert Group Member, OECD/European Commission - AI Literacy Framework (2024 - 2026)
- Committee Member, National Academies of Science, Engineering, & Medicine: K-12 Data & Computing Competencies Committee (2024 - 2026)
- Committee Member, National Academies of Science, Engineering and Medicine - Committee on NASA Science Activation 2.0 (2023 - 2024)
- President, International Society of the Learning Sciences (2020 - 2021)
- Committee Member, National Academies of Science, Engineering and Medicine - Committee on Authentic STEM Experiences (2019 - 2021)
- Board Member, International Society of the Learning Sciences (2015 - 2022)

PROGRAM AFFILIATIONS

- Symbolic Systems Program

PROFESSIONAL EDUCATION

- PhD, Northwestern University , Learning Sciences (2008)
- BS, UC San Diego , Cognitive Science with Specialization in Human-Computer Interaction (2001)
- BA, UC San Diego , Mathematics (2001)

LINKS

- Personal Website: http://www.victor-r-lee.com

Research & Scholarship

RESEARCH INTERESTS

- Artificial intelligence (AI)
- Classroom Discourse and Interaction
- Collaborative Learning
- Community-Engaged Research
- Curriculum Studies & Design
- Data Science Education
- Design-based research
- Embodied Cognition
- Human-Computer Interaction

- Learning Sciences
- Learning Technologies
- Mathematics Education
- Moral, Character, and Purpose Development
- Play, Games, and Learning
- Research-Practice Partnerships
- STEM Education
- Science Education
- Teacher Education
- Teacher Learning
- Teacher Preparation
- Teacher Professional Development

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Data - young people's data literacy experiences and K-12 data science education, with emphasis on quantified self data (wearables and/or self-tracked) and data learning experiences across disciplines.

Computing - the design and development of computational thinking and computational literacy, with emphasis on unplugged-to-plugged computing and elementary school programming experiences

AI - tools and resources for general understandings of artificial intelligence, especially as it relates to education

Maker education - how youth engage with maker learning activities, making in libraries (school and public) and in out-of-school makerspaces, and how to support teachers in implementing maker learning experiences

STEM - curriculum design and research, especially as it relates to science content and practices in K-12 as well as conceptual change, use of technology in service of K-12 STEM education

Teaching

COURSES

2026-27

- AI and Education: Foundations, Opportunities, Challenges, and Considerations: EDUC 246I (Aut)
- Introduction to Learning Sciences: Understanding Learning and Learning Environments: EDUC 333A (Aut)
- Learning, Making, Crafting, & Creating: EDUC 237 (Win)

2025-26

- Introduction to Learning Sciences: Understanding Learning and Learning Environments: EDUC 333A (Aut)
- Learning Sciences and Technology Design Research Seminar and Colloquium: EDUC 291 (Aut)
- Learning, Making, Crafting, & Creating: EDUC 237 (Win)

2024-25

- Design to Equip Learners in Under-Resourced Communities: DESIGN 294, EDUC 482 (Spr)

- Introduction to Learning Sciences: Understanding Learning and Learning Environments: EDUC 333A (Aut)
- Learning, Making, Crafting, & Creating: EDUC 237 (Win)

2023-24

- Introduction to Learning Sciences: Understanding Learning and Learning Environments: EDUC 333A (Aut)
- Learning, Making, Crafting, & Creating: EDUC 237 (Win)
- Research in Science, Engineering, and Technology Education: Mental Models and Conceptual Change: EDUC 359B (Spr)
- Science, Engineering and Technology Education Seminar: EDUC 359C (Win)

STANFORD ADVISEES

Orals Chair

Alan Cheng

Postdoctoral Faculty Sponsor

Tim Alex Daniel Oertegren

Doctoral Dissertation Advisor (AC)

Maria Romero

Doctoral Dissertation Co-Advisor (AC)

Lisa Archuleta

Master's Program Advisor

Manuel Cardenas, Brooke Ho

Doctoral (Program)

Lisa Archuleta, Liz Harris, Judy He, Maria Romero, Bernardo Silveira, Jessica Yauney, Xi Jia Zhou

Publications

PUBLICATIONS

- **Words as Data: Integrating Data Visualizations and English Language Arts for Classrooms with Multilingual Students** *JOURNAL OF STATISTICS AND DATA SCIENCE EDUCATION*
  Lee, V. R., Harris, E., Chen, R., Levine, S.
  2026
- **Cheating: The AI elephant in the classroom** *PHI DELTA KAPPAN*
  Lee, V. R., Pope, D., Miles, S.
  2025; 107 (3-4): 24-28
- **A cross-sectional look at teacher reactions, worries, and professional development needs related to generative AI in an urban school district** *EDUCATION AND INFORMATION TECHNOLOGIES*
  Chen, R., Lee, V. R., Lee, M.
  2025
- **Cheating in the age of generative AI: A high school survey study of cheating behaviors before and after the release of ChatGPT** *Computers and Education: Artificial Intelligence*
  Lee, V. R., Pope, D., Miles, S., Zárate, R. C.
  2024
- **Data science education across the disciplines: Underexamined opportunities for K-12 innovation** *BRITISH JOURNAL OF EDUCATIONAL TECHNOLOGY*
  Jiang, S., Lee, V. R., Rosenberg, J. M.

2022

- **A Call for a Humanistic Stance Toward K-12 Data Science Education** *EDUCATIONAL RESEARCHER*
  Lee, V. R., Wilkerson, M., Lanouette, K.
  2021

- **Remembering What Produced the Data: Individual and Social Reconstruction in the Context of a Quantified Self Elementary Data and Statistics Unit** *COGNITION AND INSTRUCTION*
  Lee, V. R., Drake, J., Cain, R., Thayne, J.
  2021

- **Data Use by Middle and Secondary Students in the Digital Age: A Status Report and Future Prospects**
  Lee, V. R., Wilkerson, M.
  National Academies of Science, Engineering, and Medicine.
  2018

- **Cheating in the second year of generative AI chatbots: a follow-up study on high school student cheating behaviors** *ETR&D-EDUCATIONAL TECHNOLOGY RESEARCH AND DEVELOPMENT*
  Chen, R., Lee, V. R., Kuo, A., Pope, D., Miles, S.
  2026

- **Teaching high school students about generative AI: Cases of teacher lesson design** *JOURNAL OF EDUCATIONAL RESEARCH*
  Delaney, V., Adisa, I., Mah, C., Lee, V. R.
  2025

- **Feeling a Goodness of Fit: Children Establishing Corporeal Comfort in STEM Learning** *SCIENCE EDUCATION*
  Silvis, D., Clarke-Midura, J., Lee, V. R., Shumway, J.
  2025

- **Promoting Comprehension and Engagement in Introductory Data and Statistics for Blind and Low-Vision Students: A Co-Design Study**
  Fan, D., Tomassetti, O., Mouallem, A., Kim, G., Patel, S., Hwang, S., Leader, P., Sugrue, D., Chen, T., Ou, D., Lee, V. R., Balasubramanian, L., Subramonyam, et al
  ASSOC COMPUTING MACHINERY.2025

- **An interaction analysis of a computer science co-design conversation on cultural relevance and its implications for design** *JOURNAL OF RESEARCH ON TECHNOLOGY IN EDUCATION*
  Robillard, S. M., Lee, V. R., Clarke-Midura, J., Shumway, J.
  2024

- **Children's mathematical engagement based on their awareness of coding toy design features** *MATHEMATICAL THINKING AND LEARNING*
  Kozlowski, J., Shumway, J., Moyer-Packenham, P., Clarke-Midura, J., Lee, V.
  2024

- **High school teachers' data set aesthetics** *INFORMATION AND LEARNING SCIENCES*
  Delaney, V., Lee, V. R.
  2024

- **Tangible Stats: An Embodied and Multimodal Platform for Teaching Data and Statistics to Blind and Low Vision Students**
  Fan, D., Kim, G., Tomassetti, O., Patel, S. N., O'Modhrain, S., Lee, V. R., Follmer, S., ASSOC COMPUTING MACHINERY
  ASSOC COMPUTING MACHINERY.2024

- **From Consumers to Critical Users: Prompty, an AI Literacy Tool for High School Students**
  Dennison, D., Garcia, R. C. C., Sarin, P., Wolf, J., Bywater, C., Xie, B., Lee, V. R.
  edited by Wooldridge, M., Dy, J., Natarajan, S.
  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2024: 23300-23308

- **Co-designing AI Education Curriculum with Cross-Disciplinary High School Teachers**
  Xie, B., Sarin, P., Wolf, J., Garcia, R. C. C., Delaney, V., Sieh, I., Fuloria, A., Dennison, D., Bywater, C., Lee, V. R.
  edited by Wooldridge, M., Dy, J., Natarajan, S.
  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2024: 23146-23154

- **Common "place" observations about embodiment and CSCL** *INTERNATIONAL JOURNAL OF COMPUTER-SUPPORTED COLLABORATIVE LEARNING*
  Lee, V. R. R.
  2023
- **Designing formative assessments of early childhood computational thinking** *EARLY CHILDHOOD RESEARCH QUARTERLY*
  Clarke-Midura, J., Lee, V. R., Shumway, J. F., Silvis, D., Kozlowski, J. S., Peterson, R.
  2023; 65: 68-80
- **Learning sciences and learning engineering: A natural or artificial distinction?** *JOURNAL OF THE LEARNING SCIENCES*
  Lee, V. R.
  2022
- **The technical matters: young children debugging (with) tangible coding toys** *INFORMATION AND LEARNING SCIENCES*
  Silvis, D., Lee, V. R., Clarke-Midura, J., Shumway, J. F.
  2022
- **Instructional support for learning with agent-based simulations: A tale of vicarious and guided exploration learning approaches (vol 142, 103644, 2019)** *COMPUTERS & EDUCATION*
  Dubovi, I., Lee, V. R.
  2022; 183
- **Taking data feminism to school: A synthesis and review of pre-collegiate data science education projects** *BRITISH JOURNAL OF EDUCATIONAL TECHNOLOGY*
  Lee, V. R., Pimentel, D. R., Bhargava, R., D'Ignazio, C.
  2022
- **Exploring Measurement through Coding: Children's Conceptions of a Dynamic Linear Unit with Robot Coding Toys** *EDUCATION SCIENCES*
  Welch, L. E., Shumway, J. F., Clarke-Midura, J., Lee, V. R.
  2022; 12 (2)
- **Identifying the Content, Lesson Structure, and Data Use Within Pre-collegiate Data Science Curricula** *JOURNAL OF SCIENCE EDUCATION AND TECHNOLOGY*
  Lee, V. R., Delaney, V.
  2021
- **Kindergarten students' mathematics knowledge at work: the mathematics for programming robot toys** *MATHEMATICAL THINKING AND LEARNING*
  Shumway, J. F., Welch, L. E., Kozlowski, J. S., Clarke-Midura, J., Lee, V. R.
  2021
- **Tabletop games designed to promote computational thinking** *COMPUTER SCIENCE EDUCATION*
  Poole, F. J., Clarke-Midura, J., Rasmussen, M., Shehzad, U., Lee, V. R.
  2021
- **Youth engagement during making: using electrodermal activity data and first-person video to generate evidence-based conjectures** *INFORMATION AND LEARNING SCIENCES*
  Lee, V. R.
  2021
- **Developing a kindergarten computational thinking assessment using evidence-centered design: the case of algorithmic thinking** *COMPUTER SCIENCE EDUCATION*
  Clarke-Midura, J., Silvis, D., Shumway, J. F., Lee, V. R., Kozlowski, J. S.
  2021
- **It's More Than Just Technology Adoption: Understanding Variations in Teachers' Use of an Online Planning Tool** *TECHTRENDS*
  Leary, H., Lee, V. R., Recker, M.
  2021
- **What do Teens Make of Personal Informatics? Young People's Responses to Self-Tracking Practices for Self-Determined Motives**

Potapov, K., Vasalou, A., Lee, V., Marshall, P., ASSOC COMP MACHINERY
ASSOC COMPUTING MACHINERY.2021

- **Expansive Framing and Collaborative Professional Development: Supporting Teacher Learning**
  Stephens, C., Lee, V. R., Clarke-Midura, J., Recker, M., ACM
  ASSOC COMPUTING MACHINERY.2021: 1339
- **Let's cut to commercial: where research, evaluation, and design of learning games should go next** *ETR&D-EDUCATIONAL TECHNOLOGY RESEARCH AND DEVELOPMENT*
  Lee, V. R.
  2020
- **An Emerging Technology Report on Computational Toys in Early Childhood** *TECHNOLOGY KNOWLEDGE AND LEARNING*
  Hamilton, M., Clarke-Midura, J., Shumway, J. F., Lee, V. R.
  2020; 25 (1): 213–24
- **Introducing Coding through Tabletop Board Games and Their Digital Instantiations across Elementary Classrooms and School Libraries**
  Lee, V. R., Poole, F., Clarke-Midura, J., Recker, M., Rasmussen, M., ASSOC COMP MACHINERY
  ASSOC COMPUTING MACHINERY.2020: 787-793
- **Instructional support for learning with agent-based simulations: A tale of vicarious and guided exploration learning approaches** *COMPUTERS & EDUCATION*
  Dubovi, I., Lee, V. R.
  2019; 142
- **At Home With Data: Family Engagements With Data Involved in Type 1 Diabetes Management** *JOURNAL OF THE LEARNING SCIENCES*
  Lee, V. R., Dubovi, I.
  2019
- **The picture of smartphones at school is not a dire one and the picture of student competence is a bright one** *LEARNING CULTURE AND SOCIAL INTERACTION*
  Lee, V. R.
  2019; 21: 293–95
- **A wearables-based approach to detect and identify momentary engagement in afterschool Makerspace programs** *Contemporary Educational Psychology*
  Lee, V. R., Fischback, L., Cain, R.
  2019
- **An Expansively-framed Unplugged Weaving Sequence Intended to Bear Computational Fruit of the Loom**
  Lee, V. R., Vincent, H., ACM
  ASSOC COMPUTING MACHINERY.2019: 124-127
- **The building blocks of coding: a comparison of early childhood coding toys** *INFORMATION AND LEARNING SCIENCES*
  Clarke-Midura, J., Lee, V. R., Shumway, J. F., Hamilton, M. M.
  2019; 120 (7-8): 505–18
- **A Broad View of Wearables as Learning Technologies: Current and Emerging Applications** *LEARNING IN A DIGITAL WORLD: PERSPECTIVE ON INTERACTIVE TECHNOLOGIES FOR FORMAL AND INFORMAL EDUCATION*
  Lee, V. R., Shapiro, R.
  edited by Diaz, P., Ioannou, A., Bhagat, K. K., Spector, J. M.
  2019: 113–33
- **On researching activity tracking to support learning: a retrospective** *INFORMATION AND LEARNING SCIENCES*
  Lee, V. R.
  2019; 120 (1-2): 133–54
- **Youth Concerns and Responses to Self-Tracking Tools and Personal Informatics Systems**
  Potapov, K., Lee, V. R., Vasalou, A., Marshall, P., Assoc Comp Machinery
  ASSOC COMPUTING MACHINERY.2019

- **Paper Circuits: A Tangible, Low Threshold, Low Cost Entry to Computational Thinking** *TECHTRENDS*
  Lee, V. R., Recker, M.
  2018; 62 (2): 197–203

- **Reconceptualizing Libraries: Perspectives from the Information and Learning Sciences.**
  edited by Lee, V. R., Phillips, A. L.
  Routledge.2018

- **A rubric for describing competences in the areas of circuitry, computation, and crafting after a course using e-textiles** *INTERNATIONAL JOURNAL OF INFORMATION AND LEARNING TECHNOLOGY*
  Lee, V. R., Fields, D. A.
  2017; 34 (5): 372–84

- **How Time Gets Used in Afterschool Maker Programs**
  Fischback, L., Lee, V. R., ACM
  ASSOC COMPUTING MACHINERY.2017

- **A Comparison of Discovered Regularities in Blood Glucose Readings across Two Data Collection Approaches Used with a Type 1 Diabetic Youth** *METHODS OF INFORMATION IN MEDICINE*
  Lee, V., Thurston, T., Thurston, C.
  2017; 56: E84–E91

- **A Comparison of Discovered Regularities in Blood Glucose Readings across Two Data Collection Approaches Used with a Type 1 Diabetic Youth** *METHODS OF INFORMATION IN MEDICINE*
  Lee, V., Thurston, T., Thurston, C.
  2017; 56: E84–E91

- **Appropriating Quantified Self Technologies to Support Elementary Statistical Teaching and Learning** *IEEE TRANSACTIONS ON LEARNING TECHNOLOGIES*
  Lee, V. R., Drake, J. R., Thayne, J. L.
  2016; 9 (4): 354–65

- **Let's Get Physical: K-12 Students Using Wearable Devices to Obtain and Learn About Data from Physical Activities** *TECHTRENDS*
  Lee, V. R., Drake, J., Williamson, K.
  2015; 59 (4): 46–53

- **Combining High-Speed Cameras and Stop-Motion Animation Software to Support Students' Modeling of Human Body Movement** *JOURNAL OF SCIENCE EDUCATION AND TECHNOLOGY*
  Lee, V. R.
  2015; 24 (2-3): 178–91

- **Learning Technologies and the Body: Integration and Implementation in Formal and Informal Learning Environments**
  edited by Lee, V. R.
  Routledge.2015

- **Understanding the Opportunities and Challenges of Introducing Computational Crafts to Alternative High School Students** *EDUCATIONAL MEDIA AND TECHNOLOGY YEARBOOK, VOL 39*
  DuMont, M., Lee, V. R.
  edited by Orey, M., Branch, R. M.
  2015; 39: 83–99

- **The Role of School District Science Coordinators in the District-Wide Appropriation of an Online Resource Discovery and Sharing Tool for Teachers** *JOURNAL OF SCIENCE EDUCATION AND TECHNOLOGY*
  Lee, V. R., Leary, H. M., Sellers, L., Recker, M.
  2014; 23 (3): 309–23

- **Students' Digital Photography Behaviors during a Multiday Environmental Science Field Trip and Their Recollections of Photographed Science Content** *EDUCATION RESEARCH INTERNATIONAL*
  Lee, V. R.
  2014

- **Knowing and Learning with Technology (and on Wheels!): An Introduction to the Special Issue** *TECHNOLOGY KNOWLEDGE AND LEARNING*
  Lee, V. R.
  2013; 18 (1-2): 1–8

- **Digital Physical Activity Data Collection and Use by Endurance Runners and Distance Cyclists** *TECHNOLOGY KNOWLEDGE AND LEARNING*
  Lee, V. R., Drake, J.
  2013; 18 (1-2): 39–63

- **Collaborative Strategic Board Games as a Site for Distributed Computational Thinking** *DEVELOPMENTS IN CURRENT GAME-BASED LEARNING DESIGN AND DEPLOYMENT*
  Berland, M., Lee, V. R., Felicia, P.
  2013: 285–301

- **Framing in cognitive clinical interviews about intuitive science knowledge: Dynamic student understandings of the discourse interaction** *SCIENCE EDUCATION*
  Russ, R. S., Lee, V. R., Sherin, B. L.
  2012; 96 (4): 573–99

- **Some assembly required: How scientific explanations are constructed during clinical interviews** *JOURNAL OF RESEARCH IN SCIENCE TEACHING*
  Sherin, B. L., Krakowski, M., Lee, V. R.
  2012; 49 (2): 166–98

- **Material Pets, Virtual Spaces, Isolated Designers: How Collaboration May Be Unintentionally Constrained in the Design of Tangible Computational Crafts**
  DuMont, M., Lee, V. R., ACM
  ASSOC COMPUTING MACHINERY.2012: 244–47

- **In Pursuit of Consensus: Disagreement and legitimization during small-group argumentation** *INTERNATIONAL JOURNAL OF SCIENCE EDUCATION*
  Berland, L. K., Lee, V. R.
  2012; 34 (12): 1857–82

- **RETWEETING HISTORY Exploring the Intersection of Microblogging and Problem-based Learning for Historical Reenactments** *DESIGNING PROBLEM-DRIVEN INSTRUCTION WITH ONLINE SOCIAL MEDIA*
  Lee, V. R., Shelton, B. E., Walker, A., Caswell, T., Jensen, M.
  edited by Seo, K. K., Pellegrino, D. A., Engelhard, C.
  2012: 23–40

- **Integrating physical activity data technologies into elementary school classrooms** *ETR&D-EDUCATIONAL TECHNOLOGY RESEARCH AND DEVELOPMENT*
  Lee, V. R., Thomas, J. M.
  2011; 59 (6): 865–84

- **Collaborative Strategic Board Games as a Site for Distributed Computational Thinking** *INTERNATIONAL JOURNAL OF GAME-BASED LEARNING*
  Berland, M., Lee, V. R.
  2011; 1 (2): 65–81

- **How Different Variants of Orbit Diagrams Influence Student Explanations of the Seasons** *SCIENCE EDUCATION*
  Lee, V. R.
  2010; 94 (6): 985–1007

- **What Students Include in Hand-Drawn Diagrams to Explain Seasonal Temperature Variation**
  Lee, V. R.
  edited by Goel, A. K., Jamnik, M., Narayanan, N. H.
  SPRINGER-VERLAG BERLIN.2010: 313–15

- **Adaptations and Continuities in the Use and Design of Visual Representations in US Middle School Science Textbooks** *INTERNATIONAL JOURNAL OF SCIENCE EDUCATION*
  Lee, V. R.
  2010; 32 (8): 1099–1126