Youngjin Lee

CONTACT INFORMATION

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ACADEMIC DEGREES

University of Illinois at Urbana-Champaign (UIUC), Champaign, IL

Ph.D., Educational Computing, December 2003

- Dissertation Title: Efficient Web Searching for Open-Ended Questions: The Effects of Visualization and Data Mining Technology

Seoul National University (SNU), Seoul, South Korea

M.Ed., Science Education, February 1996

Seoul National University (SNU), Seoul, South Korea

B.S., Earth Science, February, 1994

ACADEMIC POSITIONS

University of North Texas (UNT)
Department of Learning Technologies
Denton, TX
Associate Professor — **September 2019 – Present**

University of Kansas (KU)
Educational Technology Program
Lawrence, KS
Associate Professor — **July 2013 – August 2019**
Assistant Professor — **July 2007 – July 2013**

PROFESSIONAL EXPERIENCE

Massachusetts Institute of Technology (MIT)
RELATE (REsearch in Learning, Assessing, and Tutoring Effectively) Group
Cambridge, MA
Research Associate — **August 2005 – July 2007**

National Center for Supercomputing Applications (NCSA)
Automated Learning Group
Champaign, IL
Visiting Senior Research Programmer — **January 2004 – August 2005**

Beckman Institute of Advanced Science and Technology
Urbana, IL
Research Assistant **August 1999 – December 2003**

Electronics and Telecommunications Research Institute (ETRI), Daejon, South Korea
Research Scientist **December 1995 – February 1999**

Research

Peer-Reviewed Journals

Lee, Y. (submitted). Examining behaviors of MOOC students who are engaged but unsuccessful in learning.

Wang, X., **Lee, Y.**, & Lin, L. (in progress). Instructional design quality and sentiment analysis of reviews in the Class Central Top 20 MOOCs.

A. G., & **Lee, Y.** (in progress). A confirmatory factor analysis on pleasurable learning experiences scale.

A, G., & **Lee, Y.** (in press). College students' perceptions of pleasure in learning: Designing gameful educational gamification. *International Journal on E-Learning*.

Gu, P. & **Lee, Y.** (2019). Promoting students' motivation and use of SRL strategies in the Web-based mathematics learning environment. *Journal of Educational Technology Systems*, *47*(3), 391–410.

Lee, Y. (2019). Estimating student ability and problem difficulty using Item Response Theory (IRT) and TrueSkill. *Information Discovery and Delivery*, *47*(2), 67–75.

Lee, Y. (2018). Using Self-Organizing Map (SOM) and clustering to investigate problem solving patterns in the Massive Open Online Course (MOOC): An exploratory study. *Journal of Educational Computing Research*, *57*(2), 471–490.

Lee, Y. (2018). Effect of uninterrupted time-on-task on students' success in Massive Open Online Courses (MOOCs). *Computers in Human Behavior*, *86*, 174–180.

Lee, Y. (2017). Modeling students' problem solving performance in the computer-based mathematics learning environment. *International Journal of Information and Learning Technology*, *34*(5), 385–395.

Lee, Y. (2016). Predicting students' problem solving performance using Support Vector Machine. *Journal of Data Science*, *14*, 231–244.

Sullivan, D. K., Goetz, J. R., Gibson, C. A., Mayo, M. S., Washburn, R. A., **Lee, Y.**, Ptomey, L. T., & Donnelly, J. E. (2016). A virtual reality intervention (Second Life) to improve weight maintenance: Rationale and design for an 18-month randomized trial. *Contemporary Clinical Trials*, *46*, 77–84.

Lee, Y. (2015). Developing iPad-based physics simulations that can help people learn Newtonian physics concepts. *Journal of Computers in Mathematics and Science Teaching*, *34*(3), 299–325.

Lee, Y. (2015). Analyzing log files to predict students' problem solving performance in a computer-based physics tutor. *Educational Technology & Society*, *18*(2), 225–236.

Lee, Y. (2012). Developing an efficient computational method that estimates the ability of students in a Web-based learning environment. *Computers & Education*, *58*(1), 579–589.

Lee, Y. (2011). Utilizing formative assessments to guide student learning in an interactive learning environment. *Journal of Educational Technology Systems*, *39*(3), 245–260.

Lee, Y. (2011). Scratch: Multimedia programming environment for young gifted learners. *Gifted Child Today*, *34*(2), 26–31.

Macpherson, G. L., **Lee, Y.**, & Steeples, D. (2011). Group-examination improves learning for low-achieving students. *Journal of Geoscience Education*, *59*, 41–45.

Lee, Y. (2010). Empowering teachers to create educational software: A constructivist approach utilizing Etoys, pair programming and cognitive apprenticeship. *Computers & Education*, *56*(2), 527–538.

Lee, Y. (2010). Developing a mobile physics learning environment based on physics misconception research and e-learning design principles. *Journal of Computers in Mathematics and Science Teaching*, *29*(3), 399–416.

Lee, Y. (2010). Developing computer programming concepts and skills via technology-enriched language-art projects: A case study. *Journal of Educational Multimedia and Hypermedia*, *19*(3), 307–326.

Lee, Y. (2010). Effects of instructional preparation strategies on problem solving in a Web-based learning environment. *Journal of Educational Computing Research*, *42*(4), 385–406.

Palazzo, D. J., **Lee, Y.**, Warnakulasooriya, R., & Pritchard, D. E. (2010). Patterns, correlates, and reduction of homework copying. *Physical Review Special Topics: Physics Education Research*, *6*, 010104, DOI: 10.1103/PhysRevSTPER.6.010104

Pritchard, D. E., **Lee, Y.**, & Bao, L. (2008). Mathematical learning models that depend on prior knowledge and instructional strategies. *Physical Review Special Topics: Physics Education Research*, *4*, 010109, DOI: 10.1103/PhysRevSTPER.4.010109

Lee, Y., Palazzo, D. J., Warnakulasooriya, R., & Pritchard, D. E. (2008). Measuring student learning with Item Response Theory, *Physical Review Special Topics: Physics Education Research*, *4*, 010102, DOI: 10.1103/PhysRevSTPER.4.010102

Lee, Y. (2005). VisSearch: A collaborative Web searching environment. *Computers & Education, 44*(4), 423–439.

Lee, Y. (2004). Creating a concept map of your Web searches: A design rationale and Web-enabled application. *The Journal of Computer Assisted Learning, 20*, 103–113.

Lee. Y (2004). The effect of creating external representations on the efficiency of Web searching. *Interactive Learning Environments, 12*(3), 227 – 250.

Peer-reviewed Book Chapters

Hsu, Y., Meyen, E., & **Lee, Y.** (2018). Student-centered virtual learning environments in higher education. In M. Boboc & S. Koc (Eds.), *Understanding Emotional Analytics for Student Engagement: An Instructional Visual Design Perspective* (pp. 70–102). Hershey, PA: IGI Global

Lee, Y. (2005). Knowledge visualization and information visualization - Search for synergies. In S.-O. Tergan & T. Keller (Eds.), *Facilitating Web Search with Visualization and Data Mining Techniques.* Berlin, Germany: Springer-Verlag.

Peer-Reviewed Conference Presentations

Lee, Y. (2019). *TrueSkill: An online machine learning algorithm that can efficiently estimate student ability in MOOCs.* Paper presented at the Association for Educational Communications and Technology annual meeting, Las Vegas, NV.

Lee, Y. (2017). *Clustering MOOC students using Self-Organizing Map (SOM).* Paper presented at the Association for Educational Communications and Technology annual meeting, Jacksonville, FL.

Gu, P. & **Lee, Y.** (2017). *Promoting students' motivation and use of SRL strategies in online mathematics learning.* Paper presented at the Association for Educational Communications and Technology annual meeting, Jacksonville, FL.

Lee, Y. (2017). *An investigation on the learning behaviors of students enrolled in a large-scale MOOC.* Paper presented at the American Educational Research Association annual meeting, San Antonio, TX.

A, G., & **Lee, Y.** (2017). *Consequential factors in education gamification: An instrument for studying pleasurability in learning.* Paper presented at the American

Educational Research Association annual meeting, San Antonio, TX.

Lee, Y. (2016). *Understanding student learning in MOOC: A data mining approach.* Paper presented at the Association for Educational Communications and Technology annual meeting, Las Vegas, NV.

Hsu, K.-C., & **Lee, Y.** (2016). *Social gamification of e-learning for science education outreach.* Paper presented at the Association for Educational Communications and Technology annual meeting, Las Vegas, NV.

Lee, Y. (2016). *Estimating students' problem solving performance in a Web-based learning environment: A data mining approach.* Paper presented at the American Educational Research Association annual meeting, Washington DC.

Lee, Y., Sullivan, D., & Donnelly, J. (2015). *Developing an automated data collection mechanism in Second Life.* Paper presented at the Association for Educational Communications and Technology annual meeting, Indianapolis, IN.

Hsu, K., & **Lee, Y.** (2015). *Social gamification in multimedia instruction to advance glacier science for students grades K-4.* Paper presented at the E-Learn, Kona, HI.

Lee, Y. (2014). *Predictive learning analytics in action: Estimating students' problem solving performance from log files of a computer-based physics tutor.* Paper presented at the Association for Educational Communications and Technology annual meeting, Jacksonville, FL.

Lee, Y. (2014). *Building a predictive model of problem solving performance of students using a computer-based physics tutor.* Paper presented at the American Educational Research Association annual meeting, Philadelphia, PA.

Lee, Y. (2013). *Developing iPad-based physics simulation games that can help students learn force and motion concepts.* Paper presented at the Extended Joint International Symposium among Seoul National University, Hokkaido University, and National Taiwan Normal University, Seoul, South Korea.

Lee, Y. (2013). *iSimPhysics: iPad games that can help students learn Newtonian physics concepts.* Paper presented at the Association for Educational Communications and Technology annual meeting, Anaheim, CA.

Lee, Y. (2012). *Developing game-like computer simulation games running on iPad that can teach difficult physics concepts.* Paper presented at the Association for Educational Communications and Technology, Louisville, KY.

Sharon, G., & **Lee, Y.** (2012). *Pre-service teachers and technology: Authentic activities in a cognitive apprenticeship framework.* Paper presented at the World Conference

on Educational Media and Technology, Denver, CO.

Lee, Y., Palazzo, D. J., & Pritchard, D. E. (2011). *Comparing an academic dishonesty survey with reality.* Paper presented at the American Association of Physics Teachers Annual Meeting, Omaha, NE.

Pritchard, D. E., Palazzo, D. J., **Lee, Y.** & Warnakulasooriya, R. (2011). *Patterns, consequences, and reduction of homework copying.* Paper presented at the American Association of Physics Teachers Annual Meeting, Omaha, NE.

Lee, Y. (2011). *Empowering teachers to create education software meeting their own instructional needs.* Paper presented at the Association for Educational Communications and Technology, New Orleans, LA.

Lee, Y. (2010). *Learning physics on the go: From podcast to computer simulation.* Paper presented at the International Society for Technology in Education Conference, Denver, CO.

Lee, Y., Bao, L., & Pritchard, D. E. (2009). *Modeling how pre/post gain depends on prior knowledge.* Paper presented at the American Association of Physics Teachers Annual Meeting, Ann Arbor, MI.

Lee, Y. (2009). *Constructionist learning technology helps a young child learn computer programming.* Paper presented at the Educational Multimedia, Hypermedia and Telecommunications 2009, Honolulu, HI.

Lee, Y., & Pritchard, D. E. (2009). *Effects of instructional preparations on the problem solving in a Web-based physics learning environment.* Paper presented at the American Educational Research Association Annual Meeting, San Diego, CA.

Pritchard, D. E., Palazzo, D. J., & **Lee, Y.** (2009). *Copying online homework and declining student performance.* Paper presented at the American Association of Physics Teachers Annual Meeting, Ann Arbor, MI.

Lee, Y., & Pritchard, D. E. (2008). *Scaffold Student Learning in a Web-based Tutoring Environment.* Paper presented at the American Educational Research Association Annual Meeting, New York, NY.

Pritchard, D. E., Palazzo, D. J., **Lee, Y.** & Warnakulasooriya, R. (2008). *Patterns, consequences, and reduction of homework copying.* Paper presented at the American Association of Physics Teachers Annual Meeting, Edmonton, Canada.

Pritchard, D. E., **Lee, Y.**, & Bao, L. (2007). *How prior knowledge affects learning: Common leaning theories lead to different learning models.* Paper presented at the American Association of Physics Teachers Annual Meeting, Greensboro, NC.

Warnakulasooriya, R., **Lee, Y.**, Palazzo, D. J., & Pritchard, D. E. (2006). *Expert-novice studies using a web-based Socratic tutor.* Paper presented at the American Association of Physics Teachers winter meeting, Anchorage, AK.

Lee, Y. & Bajcsy, P. (2005). *An information gathering system for medical image inspection.* Paper presented at the Medical Imaging 2005, San Diego, CA.

Lee, Y. & Levin, J. (2004). *Facilitating Web searches for open-ended questions with a concept mapping technique.* Paper presented at the American Educational Research Association Annual Meeting, San Diego, CA.

Lee, Y., & Levin, J. (2003). *Can visual representations improve efficiency of Web searching?* Paper presented at the NECC 2003, Seattle, WA.

Kauwell, D. A., Levin, J., **Lee, Y.**, & Yu, H. (2000). *From square-riggers to the Internet, the search for information.* Paper presented at the ACM Hypertext 2000. San Antonio, TX.

Kauwell, D. A., Levin, J., **Lee, Y.**, Yu, H. & Schiff, D. (2000). *Learning amidst a sea of information in the new millennium.* Paper presented at the World Conference on Educational Media and Technology. Montreal, Canada.

Kauwell, D. A., Levin, J., Yu, H. & **Lee, Y.** (2000). *Visit: An advance in the location, analysis and archiving of Web information.* Paper presented at the WebNet. San Antonio, TX.

Grants

Lee, Y. (2018). *Using IRT and TrueSkill to estimate ability of students solving problems in an e-learning environment* School of Education Research Grant, $4,592 (Principal Investigator, Funded)

Lee, Y. (2016). *Assessing usefulness of MOOCs: A data mining approach.* School of Education Research Grant, $9,020 (Principal Investigator, Funded)

Donnelly, J., Gibson, C., Goetz, J., **Lee, Y.**, Mayo, M., Sullivan, D., & Washburn, R. (2012–2016). *A virtual reality intervention (Second Life) to improve weight management*, National Institute of Health, $3,676,028 (Co-Principal Investigator, Funded)

Basham, J., Deshler, D., East, W., Greer, D., Lee, J., **Lee, Y.**, Meyen, E., Rose, D., & Smith, S. (2011–2015). *Center on online learning and students with disabilities.* U.S. Department of Education, $7,484,978 (Co-Principal Investigator, Funded)

Lee, Y. (2013). *Developing a prototype of interactive physics tutorials running on iPad.* School of Education Research Grant, $8,125 (Principal Investigator, Funded)

Lee, Y. (2011). *Estimating students' problem solving performance in a computerized learning environment: A statistical modeling approach.* School of Education Research Grant, $7,587 (Principal Investigator, Funded)

Lee, Y. (2008). *Developing prototypes of scaffolded virtual experiments for Newtonian physics.* The University of Kansas, New Faculty General Research Fund, $8,000 (Principal Investigator, Funded)

Lee, Y. (2012). *Developing and evaluating physics simulation games running on iPad that can facilitate students' learning of Newtonian physics concepts*, National Science Foundation, $401,090 (Principal Investigator, Not funded)

Lee, Y. (2012). *Utilizing physics simulation games running on tablet computers to facilitate students' inquiry learning about Newtonian physics concepts*, Spencer Foundation, $39,963 (Principal Investigator, Not funded)

Technical Report

Lee, Y., & P. Bajcsy. (2004). *Software Tools for Recording Image Inspection Processes*, NCSA-ALG-04-0006.

Honors and Awards

Leading Light Award, University of Kansas, Lawrence, KS (2013)

- It was given to 40 faculty who are principal investigators or co-principal investigator on externally funded grants of $1 million or more awarded during the 2012 fiscal year.

MIT Research Laboratory of Electronics Research Fellowship, MIT, Cambridge, MA (2006)
MIT Physics Department Research Fellowship, MIT, Cambridge, MA (2005)

Computer Skills

R, Python, HTML5/CSS, Objective-C, ActionScript, NetLogo, Matlab, Mathmatica, C/C++, Java, PHP, SmallTalk

Teaching

Courses Developed

LTEC 6514: Foundation of Data Science & Learning Analytics
ELPS 301: Educational Technology in Elementary-Middle Education
ELPS 302: Educational Technology in Middle/Secondary Education
ELPS 712: Instructional Media Development
ELPS 810: Educational Media Development
ELPS 811: Constructivist Learning Technology
ELPS 818: Games and Simulations for Learning

	ELPS 896: Dissertation Seminar ELPS 998: Interactive Courseware Development
Courses Taught	LTEC 6480: Research Seminar LTEC 5510: Technology Based Learning Environments

Service

Honors and Awards	Bob Frederick Faculty Award, University of Kansas, Lawrence, KS (2012)
University of North Texas	Member, Personal Affairs Committee and RPTC (College of Information), 2019–Present Member, Scholarship & Awards Committee (Department of Learning Technologies), 2019–Present
Journal Reviewer	Computers & Education IEEE Transactions of Learning Technologies Journal of Computer Assisted Learning Journal of Educational Computing Research Journal of Educational Psychology Journal of Educational Technology & Society
Conference Paper Viewer	American Educational Research Association Association for Educational Communications and Technology
Conference Program Committee	International Conference on Educational Data Mining, 2016–2017, 2019
Professional Organizations	American Educational Research Associations (AERA) Association for Educational Communications and Technology (AECT) International Educational Data Mining Society (IEDMS) Association for Computing Machinery (ACM)