Ryan Shaun Baker
(formerly Ryan S.J.d. Baker)

Centre for Change and Complexity in Learning
Education Futures, College of
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Adelaide University
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CV October 15, 2026

RESEARCH INTERESTS

Educational Data Mining, Learning Analytics, Hybrid Human-AI Qualitative Research, Quantitative Ethnography, Generative Artificial Intelligence and Education, Algorithmic Bias, Learning Engineering, Student Modeling (Disengagement, Affect, Knowledge, Self-Regulated Learning, Meta-Cognition), Longitudinal Success, Prediction Modeling, Data-Driven Classroom Interviewing, AI Interviewing

EDUCATION

ScB. Computer Science. Brown University. Graduated with Honors in Computer Science, May 2000.

M.S. Human-Computer Interaction. Carnegie Mellon University. Conferred August 9, 2005.

Ph. D. Human-Computer Interaction. Carnegie Mellon University. Conferred on December 22, 2005. Advisors: Kenneth R. Koedinger, Albert T. Corbett

Executive Education. Innovation and Entrepreneurship at Columbia Business School (IE@Columbia). Spring 2016.

CURRENT APPOINTMENT

Professor of Artificial Intelligence in Education. Centre for Change and Complexity in Learning, Education Futures, College of Education, Behavioural and Social Sciences, Adelaide University. September 2025-present.

OTHER CURRENT POSITIONS

Adjunct Professor. Graduate School of Education. University of Pennsylvania. September 2025-present. Also Director of Penn Center for Learning Analytics. Secondary appointment in Computer and Information Science.

Associate Editor. *Journal of Educational Data Mining*. 2008-Present.

PRIOR PROFESSIONAL EXPERIENCE

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Program Advisor. Masters in Learning Analytics and Artificial Intelligence, University of Pennsylvania. 2025-2026.

Professor. Graduate School of Education. University of Pennsylvania. Summer 2022- August 2025. Also Director of Penn Center for Learning Analytics. Secondary appointment in Computer and Information Science.

Adjunct Professor. Education Futures, University of South Australia. 2024-2025.

Faculty Director. Masters in Learning Analytics, University of Pennsylvania. 2022-2025.

Associate Professor. Graduate School of Education. University of Pennsylvania. Summer 2016-Summer 2022.

Research Fellow. LINK Lab, University of Texas at Arlington. 2017-2022.

Distinguished Associated Faculty (Honorary). Department of Computer Science, Ashoka University. 2022-unknown.

Honorary Adjunct Associate Professor. Department of Human Development. Teachers College, Columbia University. 2016-2021.

Affiliate Assistant Professor. Department of Social Science and Policy Studies. Worcester Polytechnic Institute. Fall 2013-2017.

Honorary Fellow. University of Edinburgh Moray House School of Education and Sport. 2016-unknown.

Associate Professor. Department of Human Development. Teachers College, Columbia University. Fall 2013-Summer 2016. Also **Program Coordinator** of MS in Learning Analytics.

Julius and Rosa Sachs Distinguished Lecturer. Teachers College, Columbia University. Fall 2012- Summer 2013.

Assistant Professor of Psychology and Learning Science. Department of Social Science and Policy Studies. Courtesy Appointment in Computer Science. Worcester Polytechnic Institute. Fall 2009 – Fall 2012.

Technical Director. Pittsburgh Science of Learning Center DataShop. Carnegie Mellon University. Fall 2008 – Summer 2009.

Post Doctoral Fellow. Human-Computer Interaction Institute/Pittsburgh Science of Learning Center. Carnegie Mellon University. Summer 2007 - Summer 2009. Mentor: Vincent Aleven

Research Fellow. Learning Sciences Research Institute. University of Nottingham. Spring 2006 – Spring 2007. Mentor: Shaaron Ainsworth.

Post Doctoral Fellow. Human-Computer Interaction Institute. Carnegie Mellon University. Winter 2006.

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Graduate Research Assistant/ Graduate Fellow. Human-Computer Interaction Institute. Carnegie Mellon University. Advisors: Kenneth R. Koedinger, Albert T. Corbett. Fall 2000 – Fall 2005.

Undergraduate Research Assistant. JDSL (Data Structures Library in JAVA) Project. Computer Science Department. Brown University. Advisor: Roberto Tamassia. Summer 1997 – Spring 2000.

Research Assistant. LARC (LAboratory for Recreational Computing) Games Lab. Computer Science Department. University of North Texas. Advisor: Ian Parberry. Summer 1995– Spring 1996.

Educational Software Developer. Office of Education. Superconducting Super Collider Laboratory. Managers: Sam Kivlighn, Tom Gadsden. Summer 1992– Spring 1994.

AWARDS

The Benjamin Dasher Award for Best Paper & Presentation. Frontiers in Education, 2025.

Best Senior Reviewer Award. Journal of Learning Analytics, 2025.

Prof. Ram Kumar Educational Data Mining Test of Time Award. International Educational Data Mining Society, 2024. For work with Sujith Gowda, Naomi Wixon, Jessica Kalka, Angela Wagner, Aatish Salvi, Vincent Aleven, Gail Kusbit, Jaclyn Ocumpaugh, and Lisa Rossi.

Best Short Paper Award. 16th International Conference on Educational Data Mining, 2023.

Best Paper Award. 22nd International Conference on Artificial Intelligence in Education, 2021.

Honorable Mention. MIDAS Reproducibility Challenge. Michigan Institute for Data Science, 2020. For work with Christopher Brooks and Josh Gardner.

Prof. Ram Kumar Educational Data Mining Test of Time Award. International Educational Data Mining Society, 2020. For work with Kalina Yacef.

Best Paper Award. 9th International Conference on Learning Analytics and Knowledge, 2019.

Educational Research Award. Council of Scientific Society Presidents. 2018.

Best Student Paper Award (as co-author with Anthony Botelho)**.** 11th International Conference on Educational Data Mining, 2018.

Best Student Paper Award (as co-author with Yang Jiang)**.** 19th International Conference on Artificial Intelligence in Education, 2018.

Best Paper Award. 24th Conference on User Modeling, Adaptation, and Personalization, 2016.

Best Student Paper Award (as co-author with Shimin Kai). 8th International Conference on Educational Data Mining, 2015.

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Best Paper Award. 17th International Conference on Artificial Intelligence in Education, 2015.

Best Technical Paper Award. 5th International Conference on Learning Analytics, 2015.

Attendee Choice Award for Most Original Research. 10th Annual Games+Learning+Society Conference Poster Session, 2014.

Best Paper Award. 11th International Conference on Intelligent Tutoring Systems, 2012.

James Chen Best Student Paper Award (as co-author with Michael Sao Pedro)**.** 20th International Conference on User Modeling, Adaptation, and Personalization, 2012.

AERA SIG-ATL Best Student Paper Award (as co-author with Michael Sao Pedro)**.** Annual Meeting of the American Educational Research Association, 2012.

Nomination for Teaching Award. Romeo L. Moruzzi Young Faculty Award for Innovation in Undergraduate Education, Worcester Polytechnic Institute. 2011.

People's Choice Award for Best Oral Presentation. 10th International Conference on Intelligent Tutoring Systems, 2010.

People's Choice Award for Best Interactive Event. 10th International Conference on Intelligent Tutoring Systems, 2010.

Best Paper Award. 8th International Conference on Intelligent Tutoring Systems, 2006.

Senior Prize in Computer Science. Brown University, 2000.

GRANTS, PROJECT AWARDS, AND FELLOWSHIPS

Gates Foundation. Learning-MAET: A Learning-aligned Model and Agentic Ecosystem for Tutoring. 2026-2029. Lan, A. (PI). $4,000,000 USD. Baker, R.S. (Subcontract lead). $280,000 USD.

AERDF. Methodological Support for AERDF Critical Thinking Project. 2026-2028. Baker, R.S. (PI). $430,000 USD.

Institute of Education Sciences. The Using Generative AI for Reading R&D Center (U-GAIN Reading). 2024-2029. Roschelle, J. (PI). Baker, R.S. (Co-PI). $9,999,825. Award #R305C240040.

Institute of Education Sciences. Examining the Relationship between Individual Characteristics and Self-Regulated Learning Across Multiple OpenStax Courses. 2024-2026. Baker, R.S. (PI) $916,771. Award #R305N240049.

National Science Foundation. Collaborative Research: Data-Driven Interviewing to Study the Embodied Cognitive Shifts that Occur During Geometry Learning. 2024-2027. Baker, R.S. (PI)

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$222,548. (collaborative award across three institutions -- total $763,407). Award #BCS-2341411.

National Science Foundation. Using Artificial Intelligence to Personalize Mathematics Instruction to Students Interests. 2024-2028. Walkington, C. (PI). Baker, R.S. (Co-PI). $1,296,683. Penn subcontract $97,351. Award #DRL-2341948.

National Science Foundation. Mid-scale RI-2: SafeInsights: A National Research Infrastructure for Large-Scale Learning Science and Engineering. 2024-2029. Baraniuk, R. (PI). Baker, R.S. (Subcontract lead). $89,929,970. Penn subcontract $898,294. Award #DUE-2153481.

Bill and Melinda Gates Foundation. A Dataset for Developing More Accurate Generalizable and Equitable Mind Wandering Detection Algorithms and Supporting Research. 2023-2025. Mills, C. (PI), Baker, R.S. (Subcontract lead). $300,000.

AERDF. CueThinkEF+ with Pennesota. 2023-2025. Baker, R.S. (Subcontract lead). $900,000. Penn subcontract $200,000.

National Science Foundation. Learning Analytics in STEM Ed Research: Broadening Education in Advanced Methods. 2023-2026. Baker, R.S. (PI). $499,918 (collaborative award with North Carolina State University – total $1.0M). Award #DRL-2321129.

National Science Foundation. Collaborative Research: CueLearn: Enhancing Social Problem Solving through Intelligent Support. 2023-2026. Baker, R.S. (PI). $600,032. (collaborative award with three other institutions – total $2.5M). Award# DRL-2300829.

National Science Foundation. Advancing the science of STEM interest development with machine learning and data-driven interviews. 2023-2026. Ocumpaugh, J. (PI), Baker, R.S. (Co-PI). $468,412. (collaborative award with University of Illinois – total $1.5M). Award# DRL-2301173.

Learning Engineering Virtual Institute. LEVI Engagement Hub. 2023-2025. Mills, C. (PI), Baker, R.S. (Co-PI). $1,500,000.

U.S. Department of Education, Institute of Education Sciences. Data Science Methods for Digital Learning Platforms Training Program. Award #R305B230007. July 2023 – June 2026. Baker, R.S. (PI). $795,312.

New Venture Fund. RPPL Research Infrastructure for Professional Development: Year One. Baker (PI), 2023-2025. $311,581.

Schmidt Futures. A dataset for developing more accurate, generalizable, and equitable mind wandering detection algorithms and supporting research. Mills, C. (PI), Baker, R.S. (Co-PI). 2022.

National Institutes of Health, National Institute of Neurological Disorders and Stroke. Grassroots Rigor: making rigorous research practices accessible, meaningful, and building a community around them. Kording, K.P. (PI), Baker, R.S. (Senior Personnel). August 2022-July 2028. $3,588,039. Project Number 1UC2NS128361-01.

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National Science Foundation, Convergence Accelerator Phase 1. Transforming Educational Technology Through Convergence. Baker, R.S. (PI). September 2022-February 2023. $99,953. Award #ITE-2231524.

National Science Foundation, EHR Core Research (ECR). Collaborative Research: Investigating Gender Differences in Digital Learning Games with Educational Data Mining. Baker, R.S. (PI). July 2022-April 2025. $213,887. (collaborative award with four other institutions – total $1.5M). Award #DRL-2201798.

National Science Foundation, Improving Undergraduate STEM Education (IUSE). Grappling with Graphs: New Tools for Improving Graphing Practices of Undergraduate Biology Students. Gardner, S. (PI), Baker, R.S. (Co-PI). August 2021 – July 2026. $1,566,948. Baker, R.S. (subcontract lead). August 2021 – July 2025. $222,451.

Schmidt Futures. Instrumenting the RealizeIt Platform. Kizilcec, R. (PI), Baker, R.S. (Co-PI). March 2021 – February 2023. $215,000 (total grant across institutions $500,000).

National Science Foundation, EHR Core Research (ECR). Collaborative Research: Exploring Algorithmic Fairness and Potential Bias in K-12 Mathematics Adaptive Learning. Ocumpaugh, J. (PI), Baker, R.S. (Co-PI). October 2020 – September 2025. $512,985. (collaborative award with one other institution – total $1.5M). Award #DUE-2000405.

New Schools Venture Fund, EF+Math Program. Making learning visible: scalable, multi-system detection of self-regulation related to EF. Baker, R.S. (PI). April 2020 – September 2023. $899,702.

National Science Foundation, Improving Undergraduate STEM Education. Understanding and Enhancing Self-Regulated Learning in Introductory Computer Science Courses. Fouh, E.M. (PI), Baker, R.S. (Co-PI). December 2019-November 2022. $300,000. Award #DUE-1946150.

National Science Foundation, Cyberinfrastructure for Sustained Scientific Innovation. Collaborative Research: Frameworks: Cyber Infrastructure for Shared Algorithmic and Experimental Research in Online Learning. October 1, 2019 – September 30, 2025. $1,399,995. (collaborative award with one other institution – total $3.3M). Award #DRL-1931419.

Schmidt Futures. Customizing a Digital Learning Platform for Rapid, Low-Cost Research. Baker, R.S. (subcontract lead). August 14, 2019 – July 31, 2022. $100,000.

National Science Foundation, Discovery Research PreK-12. Collaborative Research: Developing an Online Game to Teach Middle School Students Science Research Practices in the Life Sciences. Baker, R.S. (PI). September 2019-December 2025. $447,009 (collaborative award with two other institutions – total $3.0M). Award #DRL-1907437.

National Science Foundation, Cyberlearning. Collaborative Research: Student Affect Detection and Intervention with Teachers in the Loop. Baker, R.S. (PI). September 2019-August 2024. $235,513 (total grant across institutions $730,437). Award #IIS-1917545.

Office of Naval Research. Toward Learning Analytics on US Navy Training Data. Baker, R.S. (PI). September 2017-August 2018. $99,972. Award #N0014-17-1-2662.

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National Science Foundation, Discovery Research PreK-12. Collaborative Research: Using Educational Data Mining Techniques to Uncover How and Why Students Learn from Erroneous Examples. Baker, R.S. (PI). June 2017-December 2022. $584,644 (total grant across institutions $1,498,736). Award #DRL-1661121.

U.S. Department of Education, Institute of Education Sciences. Using Automating Detectors of Engagement to Identify Malleable Factors in Blended Learning Environments. Heppen, J. (PI), Baker, R.S. (Co-PI). July 2017-June 2021. $1,399,999. Award #R305A170167. Subcontract to UPenn: Using Automating Detectors of Engagement to Identify Malleable Factors in Blended Learning Environments. Baker, R.S. (subcontract lead). July 2017-June 2021. $390,157.

U.S. Department of Education, Institute of Education Sciences.
Exploring Adaptive Cognitive and Affective Learning Support For Next-Generation STEM Learning Games. Shute, V. (PI), Baker, R.S. (Co-PI). July 2017-June 2021. $1,399,996. Award #R305A170376. Subcontract to UPenn: Exploring adaptive cognitive and affective learning support for next-generation STEM learning games. Baker, R.S. (subcontract lead). July 2017-June 2021. $429,826.

National Science Foundation, Cyberlearning and Future Learning Technologies. EXP: Linguistic Analysis and a Hybrid Human-Automatic Coach for Improving Math Identity. Ocumpaugh, J.L. (PI), Baker, R. S. (Co-PI) 2016-2020. $540,047. Award #DRL-1739012.

National Science Foundation, Big Data Regional Innovation Hubs. BD Spokes: Spoke: NORTHEAST: Collaborative: Grand Challenges for Data-Driven Education. Baker, R. S. (PI) 2016-2019. $224,999. (Total grant across 3 institutions $979,097). Award #DRL-1661987.

National Science Foundation, EHR Core Research. Collaborative Research: Using Data Mining and Observation to derive an enhanced theory of SRL in Science learning environments. Baker, R. S. (PI) 2016-2021. $1,492,122. Award #DRL-1561567.

U.S. Army Research Laboratory. Integrating edX, GIFT, and CTAT. Aleven, V. (PI), Baker, R.S. (Co-PI). 2016-2019. $650,757.

Classba, Inc. Classba Research Lab on Adaptive Learning at Teachers College, Columbia University. Baker, R.S. (PI) 2015-2016. $108,851.

National Science Foundation, EHR Core Research. Collaborative Research: The Downside of Perseverance – Investigating and Moving Students Beyond Unproductive Persistence. Schechtman, N. (PI). Baker, R.S. (TC PI). 2015-2019. $399,411. (Total grant across 3 institutions $1,516,281). Award #DRL-1535340.

Bill and Melinda Gates Foundation. Digital Learning Research Network. Siemens, G. (PI). Baker, R. (Project member). 2015-2016. $1,600,000.

> **Subcontract to TC:** Digital Learning Research Network. Baker, R.S. (subcontract lead). 2015-2016. $206,000.

National Science Foundation, Data Intensive Research to Improve Teaching and Learning – An Ideas Lab to Foster Transformative Approaches to Teaching and Learning.
Collaborative Research: Modeling Social Interaction and Performance in STEM Learning. Bergner, Y. (PI). Baker, R.S. (Co-PI). 2014-2017. $774,447. Award #DRL-1418378.

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Subcontract to TC: Collaborative Research: Modeling Social Interaction and Performance in STEM Learning. Baker, R.S. (subcontract lead). 2014-2017. $185,320.

Bill and Melinda Gates Foundation (via Athabasca University). MOOC Learner Motivation and Course Completion Rates. Wang, Y.E. (PI), Baker, R.S.J.d. (Co-PI). 2013-2014. $15,000.

National Science Foundation, Research on Education and Learning (REAL). Making Math Tutors More Engaging and Effective through Interaction Design Patterns and Educational Data Mining. Baker, R.S.J.d. (PI). September 2013 – August 2017. $1,480,949. Award #DRL-1252297.

U.S. Army Research Laboratory. Detection and Transition Analysis of Engagement and Affect in a Simulation-Based Combat Medic Training Environment. Baker, R.S.J.d. (PI). 2012-2015. $958,093. Award #W911NF-13-2-0008.

Bill and Melinda Gates Foundation, US Programs, Log File and Valence Studies of Education. Modeling how Affect, Engagement, and Conscientiousness Interact and Influence Learning in Newton's Playground. Baker, R.S.J.d. (PI). 2012-2014. $673,378. Award #OPP1060038.

U.S. Department of Education, Institute of Education Sciences. The Development of a Pedagogical Agent for Physical Science Inquiry Driven by Educational Data Mining. Gobert, J.G. (PI), Baker, R.S.J.d. (Co-PI). July 2012-June 2015. $1,499,772. Award #R305A120778.

Subcontract to TC: The Development of a Pedagogical Agent for Physical Science Inquiry Driven by Educational Data Mining. Baker, R.S.J.d. (subcontract lead). July 2012-June 2015. $304,679.

Bill and Melinda Gates Foundation, US Program, Vital Behaviors and Skills Associated with Engagement Derived from Learning Analytics Topic. Towards an Engagement Pedometer for Everyone: Unobtrusive Assessment of Engagement and Disengagement. Baker, R.S.J.d. (PI). 2011-2013. $277,044. Award #OPP1048577.

National Science Foundation, Software and Hardware Foundations (SHF). SHF: Small: User Studies to Improve Novice Programming. Fisler, K. (PI), Baker, R.S.J.d. (Co-PI). 2011-2014. $261,561. Award #CCF-1116539. REU Supplement $16,000.

U.S. Department of Education, Institute of Education Sciences. Classroom Environment, Allocation of Attention, and Learning Outcomes in K-4 Students. Fisher, A. (PI), Baker, R.S.J.d. (Co-PI). 2011-2015. $1,571,973. Award #R305A110444.

Subcontract to WPI: Classroom Environment, Allocation of Attention, and Learning Outcomes in K-4 Students. Baker, R.S.J.d. (subcontract lead). 2011-2015. $ 326,099. ($66,211 spent before transfer to TC)

Subcontract to TC: Classroom Environment, Allocation of Attention, and Learning Outcomes in K-4 Students. Baker, R.S.J.d. (subcontract lead). 2011-2015. $ 259,888.

National Science Foundation, Innovative Technology Experiences for Students and Teachers (ITEST). Research: Predicting STEM Career Choice from Computational Indicators of Student Engagement within Middle School Mathematics Classes. Baker, R.S.J.d. (PI), Heffernan, N.T. (Co-PI). June 2011 – May 2016. $711,609. Award #DRL-1031398.

Subcontract to TC: Research: Predicting STEM Career Choice from Computational Indicators of Student Engagement within Middle School Mathematics Classes. Baker,

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R.S.J.d. (PI). 2012-2014. $366,210.

National Science Foundation, Research and Evaluation on Education in Science and Engineering (REESE). Empirical Research: Emerging Research: Using Automated Detectors to Examine the Relationships Between Learner Attributes and Behaviors During Inquiry in Science Microworlds. Gobert, J.G. (PI), Baker, R.S.J.d. (Co-PI). October 2010 – September 2015. $986,111. Award #DRL-1008649.

Subcontract to TC: Empirical Research: Emerging Research: Using Automated Detectors to Examine the Relationships Between Learner Attributes and Behaviors During Inquiry in Science Microworlds. Baker, R.S.J.d. (subcontract lead). 2012-2013. $79, 566.

National Science Foundation, Research and Evaluation on Education in Science and Engineering (REESE). Empirical Research: Emerging Research: Robust and Efficient Learning: Modeling and Remediating Students' Domain Knowledge. Corbett, A.T. (PI), Baker, R.S.J.d. (Co-PI). July 2009 – June 2013. $1,066,102. Award # DRL-0910188.

Subcontract to WPI: Empirical Research: Emerging Research: Robust and Efficient Learning: Modeling and Remediating Students' Domain Knowledge. Baker, R.S.J.d. (subcontract lead). 2009-2012. $161,781.

U.S. Department of Education, Institute of Education Sciences. Promoting Robust Understanding of Genetics with a Cognitive Tutor that Integrates Conceptual Learning with Problem Solving. Corbett, A.T. (PI), Baker, R.S.J.d. (Co-PI). 2009-2013. $1,422,468. Award # R305A090549.

Subcontract to WPI: Promoting Robust Understanding of Genetics with a Cognitive Tutor that Integrates Conceptual Learning with Problem Solving. Baker, R.S.J.d. (subcontract lead). 2009-2012. $265,957.

National Science Foundation, Science of Learning Centers. Toward a Decade of PSLC Research: Investigating Instructional, Social, and Learner Factors in Robust Learning through Data-Driven Analysis and Modeling. Koedinger, K.R. (PI). Baker, R.S.J.d. (Senior Personnel). February 2010- January 2015. $25,000,000. Award # SBE-0836012.

Subcontract to WPI: PSLC Projects in Affect Detection and Closing the Loop on Gaming the System. Baker, R.S.J.d. (subcontract lead). 2010-2012. $316,960.

Subcontract to TC: PSLC Projects in Affect, Gaming the System, and Robust Learning. Baker, R.S.J.d. (subcontract lead). 2012-2013. $144,096.

Pittsburgh Science of Learning Center Project Award. Improving Student Affect Through Adding Gaming Elements to Mathematics LearnLabs. Aleven, V. (PI). Baker, R.S.J.d. (co-PI). August 2008 - September 2009. $104,901.

Pittsburgh Science of Learning Center Project Award. Geometry Greatest Hits. Aleven, V (PI). Baker, R.S.J.d. (co-PI). August 2008 - September 2009. $101,861.

Pittsburgh Science of Learning Center Project Award. How Content and Interface Features Influence Student Choices Within the Learning Space. Baker, R.S.J.d. (PI). July 2007 - July 2008. $73,718.

Kaleidoscope Initiative. A Centralized Research Data Repository. Melis, E. (PI), Baker, R. (co-PI). March-December 2007. €15,000.

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National Defense Science and Engineering Graduate Fellowship. American Society of Engineering Education/Department of Defense. Fall 2001- Spring 2004.

COURSES TAUGHT

Big Data, Education, and Society. Graduate School of Education, University of Pennsylvania.
Spring 2025. (two sections)

Core Methods in Educational Data Mining. Graduate School of Education, University of Pennsylvania.
Fall 2024.

Adaptive Learning Systems. Graduate School of Education, University of Pennsylvania.
Summer 2024.

Big Data, Education, and Society. Graduate School of Education, University of Pennsylvania.
Spring 2024. (two sections)

Core Methods in Educational Data Mining. Graduate School of Education, University of Pennsylvania.
Fall 2023. (two sections)

Core Methods in Educational Data Mining. Graduate School of Education, University of Pennsylvania.
Fall 2022.

Adaptive Learning Systems. Graduate School of Education, University of Pennsylvania.
Fall 2022.

Big Data, Education, and Society. Graduate School of Education, University of Pennsylvania.
Fall 2021.

Foundations of Teaching and Learning. Graduate School of Education, University of Pennsylvania.
Fall 2021.

Intelligent Tutoring Systems. Graduate School of Education, University of Pennsylvania.
Fall 2020.

Core Methods in Educational Data Mining. Graduate School of Education, University of Pennsylvania.
Fall 2020.

Big Data, Education, and Society. Graduate School of Education, University of Pennsylvania.
Spring 2020.

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Big Data and Education. Taught on edX for University of Pennsylvania.
On-demand course starting Fall 2019.

Big Data and Education. Taught on edX for University of Pennsylvania.
Summer 2019.

Core Methods in Educational Data Mining. Graduate School of Education, University of Pennsylvania.
Spring 2019.

Foundations of Teaching and Learning. Graduate School of Education, University of Pennsylvania.
Fall 2018.

Big Data and Education. Taught on edX for University of Pennsylvania.
Spring 2018.

Big Data, Education, and Society. Graduate School of Education, University of Pennsylvania.
Spring 2018.

Foundations of Teaching and Learning. Graduate School of Education, University of Pennsylvania.
Fall 2017.

Big Data and Education. Taught on edX for University of Pennsylvania.
Summer 2017. Enrollment of 4,230 students at time of course end.

Core Methods in Educational Data Mining. Graduate School of Education, University of Pennsylvania.
Spring 2017.

Foundations of Teaching and Learning. Graduate School of Education, University of Pennsylvania.
Fall 2016.

Learning Analytics: Process & Theory. Department of Human Development, Teachers College, Columbia University. Concurrently for Moray House School of Education, University of Edinburgh. (Co-taught with Dragan Gasevic)
Spring 2016.

Technology & Human Development. Department of Human Development, Teachers College, Columbia University.
Spring 2016

Core Methods in Educational Data Mining. Department of Human Development, Teachers College, Columbia University.
Fall 2015 (student course evals: 4.6/5.0)

Big Data and Education. Taught on edX for Teachers College, Columbia University.
Summer 2015. Enrollment of 10,348 students at time of course end.

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Probability and Statistical Inference. Department of Human Development, Teachers College, Columbia University.
Spring 2015 (student course evals: 4.6/5.0; 2014 average for this course was 3.5)

Feature Engineering Studio. Department of Human Development, Teachers College, Columbia University.
Spring 2015 (student course evals: 4.3/5.0)

Core Methods in Educational Data Mining. Department of Human Development, Teachers College, Columbia University.
Fall 2014 (student course evals: 3.8/5.0)

Data, Analytics, and Learning. Taught on EdX for University of Texas, Arlington, in coordination with George Siemens, Dragan Gasevic, and Carolyn Rosé. Fall 2014. Enrollment of 25,186 students at time of course end.

Learning Analytics: Process and Theory. Department of Human Development, Teachers College, Columbia University.
Spring 2014 (student course evals: 4.7/5.0; univ. average 4.2)

Big Data and Education. Taught on Coursera for Teachers College, Columbia University.
Fall 2013. Enrollment of 44,151 students (as of 12/12/2013)

Feature Engineering Studio. Department of Human Development, Teachers College, Columbia University.
Fall 2013 (student course evals: 4.5/5.0)

Special Topics in Educational Data Mining. Department of Human Development, Teachers College, Columbia University.
Spring 2013 (student course evals: 4.3/5.0)

Advanced Methods and Analysis for the Learning and Social Sciences. Department of Social Sciences and Policy Studies, Worcester Polytechnic Institute.
Spring 2012. (student course evals: 4.86/5.0)

Cognitive Psychology. Department of Social Sciences and Policy Studies, Worcester Polytechnic Institute.
Fall 2011, A term. (student course evals: 4.13/5.0; univ. avg. for ugrad classes 4.10)
Fall 2010, B term. (student course evals: 4.22/5.0; univ. avg. for ugrad classes 4.04)

Meta-Cognition, Motivation, and Affect. Department of Social Sciences and Policy Studies, Worcester Polytechnic Institute.
Spring 2011. (student course evals: 4.5/5.0; univ. avg. for grad classes 4.22)

Educational Psychology. (taught as ISP)**.** Department of Social Sciences and Policy Studies, Worcester Polytechnic Institute.
Spring 2011, D term. (student course evals not collected)
Fall 2010, A term. (student course evals not collected)

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Research Methods for the Learning Sciences (taught as ISP)**.** Department of Social Sciences and Policy Studies, Worcester Polytechnic Institute.
Spring 2010, C term. (student course evals: 5.0/5.0; univ. avg. for grad classes 4.20)

Learning and Motivation. Co-taught with Vincent Aleven. Human-Computer Interaction Institute and Department of Psychology, Carnegie Mellon University. Spring 2009.

Design e Communicação na Web. (Design and Communication on the Web). Programa de Pos-Graduação em Engenharia de Software (Software Engineering Post-Graduate Program). Faculdade de Alagoas (Alagoas College). December 2008.

Research Methods for the Learning Sciences. Co-taught with Kenneth R. Koedinger. Human-Computer Interaction Institute, Carnegie Mellon University. Spring 2008.

Learning and Technology. Co-taught with Claire O'Malley. Learning Sciences Research Institute, University of Nottingham. Spring 2007.

Human-Computer Interaction for Computer Scientists. Co-taught with Kenneth R. Koedinger, Jacob Wobbrock, and A. Fleming Seay. Human-Computer Interaction Institute, Carnegie Mellon University. Spring 2004.

PUBLICATIONS

Total citations: 46,124 (Google Scholar, September 30, 2026)

h-index: 92 (Google Scholar, September 30, 2026)

Most cited paper: (Baker, Martin, & Rossi, 2016)
(3,925 citations – Google Scholar, September 30, 2026))

Number of distinct co-authors on published papers: 616
https://docs.google.com/spreadsheets/d/12MR0nPoEPjBzC4N0-_hmXOlnDNC-jcFpVrOsAnNtEQE/edit?gid=0#gid=0

Full list of citations per paper: http://scholar.google.com/citations?hl=en&user=hvs8PEoAAAAJ
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Journal Papers

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Baker, R.S.J.d., Barnes, T., Beck, J.E. (Eds.) (2008) *Educational Data Mining 2008: 1st International Conference on Educational Data Mining, Proceedings.* Montreal, Quebec, Canada. June 2008.

Baker, R.S.J.d., Beck, J., Berendt, B., Kroner, A., Menasalvas, E., Weibelzahl, S. (Eds.) (2007) *Complete On-Line Proceedings of the Workshop on Data Mining for User Modeling, at the 11th International Conference on User Modeling (UM 2007).* Corfu, Greece. June 2007.

Heiner, C., Baker, R., Yacef, K. (Eds.) (2006) *Proceedings of the Workshop on Educational Data Mining, at the 8th International Conference on Intelligent Tutoring Systems.* Jhongli, Taiwan. July 2006.

Technical Reports

Medvedeva, O., de Carvalho, A.M.J.B., Baker, R.S.J.d., Crowley, R.S. (2013) A classifier to detect student 'gaming' of a medical education system. Technical Report. New York, NY: Educational Data Mining Laboratory.

Porayska-Pomsta, K., Mavrikis, M., D'Mello, S., Conati, C., Baker, R. (2011) Contemporary Methods for Affect-Related Knowledge Discovery and Emotion Measurement in Learning. Cognitive Science Research Paper, Department of Informatics, University of Sussex.

Baker, R.S., Wagner, A.Z., Corbett, A.T., Koedinger, K.R. (2004) The Social Role of Technical Personnel in the Deployment of Intelligent Tutoring Systems. *CMU Technical Report CMU-HCII-04-100*, July 2004.

Workshop Papers/Presentations

Zhang, J., Baker, R.S., Basu Mallick, D., Heffernan, C., Heffernan, N. (2026) A Case Study Reexamining the Cold-Start Problem in Knowledge Tracing Models and Implications for SafeInsights, an Education Research Infrastructure. *Proceedings of the 7th Annual Workshop on Platform-Enabled Learning Engineering (PELE), Festival of Learning 2026.*

Kumar, N.A., Wittawatolarn, P., Kang, S., Peczuh, M., Lehman, B., Baker, R.S., Mills, C., Lachman, S., Sun, R., Lan, A. (2026) When Rubrics Change: Cross-Rubric Generalization for Critical Thinking Essay Scoring. *Proceedings of the KDD 2026 Special Day of AI for Education.*

Zambrano, A.F., Baker, R.S., Lan, A. (2023) Active Learning for a Classroom Observer who Can't Time Travel. *Proceedings of the 3rd International Workshop on What's Next in Affect Modeling?, International Conference on Affective Computing + Intelligent Interaction.*

Thai, K-P., Owen, V.E., Baker, R.S. (2022) Predicting Transfer in a Game-Based Adaptive Instructional System. *Proceedings of the 3rd Workshop of the Learner Data Institute, EDM2022.*

Baker, R.S., Gasevic, D. (2021) Understanding LAK by understanding its philosophical paradigms. *Philosophy of Learning Analytics Workshop, LAK2021.*

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Raamadhurai, S., Baker, R.S., Poduval, V. (2019) Curio SmartChat: A system for Natural Language Question Answering for Self-Paced K-12 Learning. *Proceedings of the 14th Workshop on Innovative Use of NLP for Building Educational Applications.*

Joksimovic, S., Baker, R.S., Ocumpaugh, J., Andres, J.M.L., Tot, I., Wang, E., Dawson, S. (2019) Automated Identification of Verbally Abusive Behaviors in Online Discussions. *Proceedings of the 3rd Workshop on Abusive Language Online,* 36-45.

Molenaar, I., Horvers, A., Dijkstra, R., Baker, R. (2019) Designing Dashboards to Support Learners' Self-Regulated Learning. In *Companion Proceedings of the 9th International Conference on Learning Analytics and Knowledge.*

Karumbaiah, S., Ocumpaugh, J., Labrum, M.J., Baker, R.S. (2019) Temporally Rich Features Capture Variable Performance Associated with Elementary Students' Lower Math Self-concept. To appear in *Proceedings of the Workshop on Social-Emotional Learning at the 9th International Learning Analytics and Knowledge Conference*.

Patikorn, T., Heffernan, N.T., Baker, R.S. (2018) ASSISTments Longitudinal Data Mining Competition 2017: A Preface. *Proceedings of the Workshop on Scientific Findings from the ASSISTments Longitudinal Data Competition,* International Conference on Educational Data Mining.

Gardner, J., Yang, Y., Baker, R.S., Brooks, R. (2018) Enabling End-to-End Machine Learning Replicability: A Case Study in Educational Data Mining. *Reproducibility in Machine Learning Workshop,* International Conference on Machine Learning 2018.

Gardner, J., Andres-Bray, M., Brooks, C., Baker, R. (2018) MORF: A Framework for Predictive Modeling and Replication at Scale With Privacy-Restricted MOOC Data. *Proceedings of the 3rd Workshop on Open Science in Big Data.*

Shechtman, N., Feng, M., Heffernan, N. & Baker, R. (2018). Clarification of the Wheel-Spinning Effect: One System, Two Contrasting Conclusions. Presentation at the *2018 Replication.Education Workshop* held at the International Conference on Educational Data Mining. Buffalo, NY. July 2018.

Baker, R., Coleman, C. (2018) Standardizing Modeling of User Behaviors: Which Behaviors Matter? *Proceedings of the Adaptive Instructional Systems Standards Workshop.*

Wang, Y.E., Baker, R., Paquette, L. (2017) Behavioral Predictors of MOOC Post-Course Development. *Proceedings of the Workshop on Integrated Learning Analytics of MOOC Post-Course Development.*

Brooks, C., Baker, R., Andres, J.M.L. (2017) Infrastructure for Replication in Learning Analytics. *Proceedings of the Workshop of the Methodology in Learning Analytics Bloc.*

Andres, J.M., Rodrigo, M.M.T., Baker, R., Paquette, L., Shute, V., Ventura, M. (2015) Analyzing Student Action Sequences and Affect While Playing Physics Playground. *Proceedings of the International Workshop on Affect, Meta-Affect, Data and Learning,* 24-33.

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Brown, R., Lynch, C., Wang, Y., Eagle, M., Albert, J., Barnes, T., Baker, R., Bergner, Y., McNamara, D. (2015) Communities of Performance & Communities of Preference. *Proceedings of the Graph Analytics Workshop at the International Educational Data Mining (EDM) Conference*.

Baker, R.S., DeFalco, J.A., Paquette, L., Georgoulas, V., Rowe, J., Mott, B., Lester, J. (2015) Motivational Feedback Designs for Frustration in a Simulation-based Combat Medic Training Environment. *Proceedings of the 3rd Annual GIFT Users Symposium,* 81-88.

Miller, W.L., Baker, R.S., Labrum, M.J., Petsche, K., Wagner, A.Z. (2014) Boredom Across Activities, and Across the Year, within Reasoning Mind. *Proceedings of the Workshop on Data Mining for Educational Assessment and Feedback.*

Ocumpaugh, J., Baker, R.S., Kamarainen, A.M., Metcalf, S.J. (2014) Modifying Field Observation Methods on the Fly: Metanarrative and Disgust in an Environmental MUVE. *Proceedings of the 4th International Workshop on Personalization Approaches in Learning Environments (PALE),* 49-54.

DeFalco, J.A., Baker, R.S.J.d. (2013) Detection and Transition Analysis of Engagement and Affect in a Simulation-based Combat Medic Training Environment. *Proceedings of the AIED 2013 Workshop on GIFT.*

Gowda, S., Baker, R.S.J.d., Pardos, Z., Heffernan, N. (2011) The Sum is Greater than the Parts: Ensembling Student Knowledge Models in ASSISTments. *Proceedings of the KDD 2011 Workshop on KDD in Educational Data*.

Baker, R.S.J.d. (2007) Is Gaming the System State-or-Trait? Educational Data Mining Through the Multi-Contextual Application of a Validated Behavioral Model. *Complete On-Line Proceedings of the Workshop on Data Mining for User Modeling at the 11th International Conference on User Modeling 2007*, 76-80.

Baker, R.S.J.d., Corbett, A.T., Wagner, A.Z. (2006) Human Classification of Low-Fidelity Replays of Student Actions. *Proceedings of the Workshop on Educational Data Mining at the 8th International Conference on Intelligent Tutoring Systems*, 29-36.

Theses

Baker, R.S. (2005) Designing Intelligent Tutors That Adapt to When Students Game the System. Doctoral Dissertation. Advisors: Kenneth R. Koedinger, Albert T. Corbett

Baker, R.S. (2000) PILOT: An Interactive Tool for Learning and Grading. Senior Honors Thesis, Brown University. Advisors: Roberto Tamassia, Thomas Dean.

Other Participation at Workshops or Conferences

Baker, R.S. (2026) Participant in panel Generative AI and future of assessments in higher education. Computing Education Summit, Melbourne, VIC, Australia.

Baker, R.S. (2026) JeepyTA: A Gen-AI powered forum teaching assistant. Presentation at OECD Digital Education Outlook 2026 Conference.

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Baker, R.S. (2026) GenAI and assessment. Panel at OECD Digital Education Outlook 2026 Conference.

Shah, M., Baker, R., Lucas, E., Lander, L., Sommer, M. & Butts, S. (2026). From Simulation to Licensure Readiness: Shadow Health Mastery as a Predictor of HESI Exam Performance. Poster presentation at International Nursing Association for Clinical Simulation & Learning Annual Conference.

Baker, R.S. (2025) Participant in Panel on Reinventing the Feedback Loop with Human-AI Teams. Empowering Learners for the Age of AI (ELAI) 2025.

Baker, R.S. (2025) How Generative AI can Enhance Teaching and Learning for Educators. XIV Nazarbayev International Schools Conference 2025. Astana, Kazakhstan, October 31, 2025.

Baker, R.S. (2025) Participant in Joint Panel EDM/L@S/AIED.

Deshpande, A., Tran, N., Huang, J., Bhargava, N., Baker, R., Nye, S. (2025) vRyan: An AI-Powered Teaching Agent Prototype Exploring Deepfake Question-Answering. Interactive Demo at the International Conference on Artificial Intelligence and Education.

Sommer, M., Shah, M., Baker, R.S., Granville, P. (2025) Identifying NCLEX-RN review course indicators to support at-risk students. Poster presentation at the 36th International Nursing Research Congress 2025.

Shah, M., Granville, P., Baker, R.S., Bussard, M. (2025) The Relationship Between the HESI Integrated Exit Exam & Next Generation NCLEX-RN: Updated Findings. Presentation at the 36th International Nursing Research Congress 2025.

Shah, M., Wilson, C., Baker, R., Granville, P, Gouveia, C., Babcock, B., Wimer, S. (2025) Radiography Success: HESI Exit Exam as a Gateway to ARRT Certification. Poster presentation at the 50th Annual Meeting of the Associate of Collegiate Educators in Radiologic Technology.

Gurung, A., Lin, J., Huang, Z., Baker, R., Aleven, V., Koedinger, K. (2024). Delayed starting and early stopping: Exploring the predictive validity of session-level indicators in predicting learning outcomes. Paper presented at the Society for Research on Educational Effectiveness (SREE) Conference, Baltimore, MD.

Steadman, C., Wong, A., Wei, Z., Baker, R., Mills, C. (2024) Too Hard or Just Right? How Difficulty Affects Student Engagement. Poster presentation at Winter Text & Discourse.

Baker, R.S. (2024) Qualitative Coding in Partnership with ChatGPT. Invited talk at the Association of Test Professional (ATP) EdTech & Computational Psychometrics 2024 Summit (ECPS). June 5, 2024.

Baker, R.S. (2024) Educational Technology: From Unknown Bias to Equity. Invited talk at the International Relations Committee Invited Session: Digital Technology: International Opportunities and Challenges for Equity in Education, AERA2024.

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Baker, R.S. (2024) A Bit of History, and How We Can Do Better. Invited talk at the Workshop on Marrying Asset- and Deficit-Based Approaches: A Data Feminist Perspective in Learning Analytics, LAK2024.

Baker, R.S. (2024) Large language models for educational assessment at the PCLA. Invited talk at LAK24 Assess: The 4th Workshop on Learning Analytics and Assessment, LAK2024.

Shah, M., Gouveia, C., Baker, R.S., Granville, P.H., Bussard, M. (2024) The Relationship Between the HESI Integrated Exit Exam and Next Generation NCLEX-RN: Preliminary Findings. Presentation at the 35th International Nursing Research Conference.

Gouveia, C., Shah, M., Granville, P., Baker, R.S., Sharp, K. (2024) Predicting Success on the NCLEX-RN with Student Activity in Learning Platforms: A Retrospective Case Study. Presentation at the 35th International Nursing Research Conference.

Baker, R.S. (2023) Participation and presentation in plenary panel, What to do About and With AI in Education: Challenges and Opportunities for AI in Teaching and Learning. National Academy of Education Annual Meeting.

Baker, R.S. (2023) The State of the Situation and Policy Recommendations for Algorithmic Bias. Invited talk at OECD Conference: Towards an effective and equitable digital education ecosystem.

Baker, R.S. (2023) AI in the Future of Education: Opportunities and Challenges. Invited panel presentation at Notre Dame Trustworthy AI Lab in Education Summit (ND-TALES).

Baker, R.S. (2023) Speaker in Symposium How do I do "Quantitative Ethnography": Broadening perspectives and practices of QE, International Conference on Quantitative Ethnography.

Smith, A., Baker, R.S. (2023) Improving Measurement Practices through Equity-Forward Instrumentation Adaptation. Presentation at the Society for Research on Educational Effectiveness.

Baker, R.S., Esbenshade, L., Vitale, J., Karumbaiah, S. (2023) Using Demographic Data as Predictor Variables: a Questionable Choice. Invited talk, Workshop on Equity, Diversity, and Inclusion in Educational Technology Research and Development, AIED2023.

Baker, R.S. (2023) Participation in Panel "Turing prize worthy research problems in Educational Data Mining" at the International Conference on Educational Data Mining.

Baker, R.S. (2023) Participation in Panel "AI, Machine Learning, and Equity in Education Research, Policy, and Practice" at the Education Leadership Data Analytics 2023 Conference.

Baker, R.S. (2023) Core Methods in Educational Data Mining. Tutorial at the International Conference on Educational Data Mining.

Baker, R.S., Esbenshade, L., Vitale, J.M., Karumbaiah, S. (2023) Using Demographic Data as Predictor Variables: a Questionable Choice. Journal track presentation at the International Conference on Educational Data Mining.

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Esbenshade, L., Baker, R.S., Vitale, J. (2023) From a Prediction Model to Meaningful Reports in School. Paper talk and poster presentation at the Education Leadership Data Analytics 2023 Conference.

Baker, R.S. (2023) Participation in Panel “Using AI in Educational Assessment” at Workshop on Artificial Intelligence in Education, University of Florida.

Baker, R.S. (2023) Participation in Roundtable “Graduate Programs in Learning Analytics Workshop: Core Competencies, Curriculum, and Instruction", Annual Meeting of the American Educational Research Association.

Kizilcec, R., Baker, R. (2023) The Behavioral Intervention Research Infrastructure (BIRI). Presentation at Workshop on Participatory Co-Design of Platform-Embedded Learning Experiments, International Conference on Learning Analytics and Knowledge.

Slater, S., Baker, R. (2023) Applied Natural Language Processing Techniques for Graph Interpretation and Design in Biology. Invited presentation at the Lowering the Technical Barriers to Trustworthy NLP Workshop, International Conference on Learning Analytics and Knowledge.

Zhang, J., Baker, R. (2023) Leveraging NLP to Detect Gaming the System in Open-ended Questions in a Math Digital Learning Game. Invited presentation at the Lowering the Technical Barriers to Trustworthy NLP Workshop, International Conference on Learning Analytics and Knowledge.

Baker, R.S. (2023) Participation in Panel “Explainable AI in Education”, Empowering Learners.AI Conference.

Shah, M., Gouveia, C., Baker, R.S., Fuller, B., San Pedro, M.O.Z., Mee, C.L. (2023) HESI Exit Exam Policy, Performance, and NCLEX-RN Success: Findings from a Nationwide Validity Study. Presentation at Sigma's 34th International Nursing Research Congress.

Gouveia, C., Baker, R.S., Shah, M. (2023) Student Usage of HESI Compass and NCLEX-RN Outcomes. Presentation at Sigma's 34th International Nursing Research Congress.

Baker, R., Hutt, S., Mogessie, M., Andres-Bray, M. (2022) Tools for MOOC Data Analysis at the University of Pennsylvania. Invited talk, community meeting, International Conference on Computers in Education.

Baker, R.S. (2022) Making learning visible: scalable, multisystem detection of self-regulation related to EF. Presentation in Panel “Creating Tools for Equitable Research and Development”, *Society for Research on Educational Effectiveness 2022 Conference.*

Baker, R.S., Hawn, M.A. (2022) Algorithmic Bias in Education. Encore paper presentation at *Workshop on Fairness, Accountability, and Transparency in Educational Data, EDM2022*.

Baker, R.S., Hawn, M.A. (2022) Algorithmic Bias in Education. Journal track presentation at *International Conference on Artificial Intelligence and Education*.

Karumbaiah, S., Ocumpaugh, J., Baker, R.S. (2022) Context Matters: Differing Implications of Motivation and Help-Seeking in Educational Technology. Journal track presentation at *International Conference on Artificial Intelligence and Education*.

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Baker, R.S., Nasiar, N., Ocumpaugh, J.L., Hutt, S., Andres, J.M.A.L., Slater, S., Schofield, M., Moore, A., Paquette, L., Munshi, A., Biswas, G. (2022) Affect-Targeted Interviews for Understanding Student Frustration. Extended reprise talk, IAALDE Best Paper Exchange Session, International Society of the Learning Sciences Annual Meeting.

Hutt, S., Baker, R.S., Mogessie, M., Valayaputtur, H. (2022) Tools for MOOC Data Analysis and Experimentation at the University of Pennsylvania. Demo at 23rd International Conference on Artificial Intelligence in Education.

Kia, F.S., Baker, R.S., Teasley, S. (2022) Beyond Questionnaires: Measuring Self-Regulated Learning Using Multichannel Trace Data in a Learning Management System. Presentation in the Symposium Authenticating the Signal: Validating Digital Traces of Student Learning Using Concurrent, Corroborating Data Sources at the Annual Meeting of the American Educational Research Association.

Gouveia, C., Baker, R.S., Shah, M., Snow, E. (2022) HESI Compass: Evidence of Growth in Nursing Students' NCLEX-RN Readiness. Presentation at the 33rd International Sigma Nursing Research Congress. July, 2022.

Baker, R.S. (2021) Assessment of complex and ill-defined competencies through machine learning. Invited talk, National Board of Medical Examiners Natural Language Processing Conference. November 2, 2021.

Ocumpaugh, J., Hutt, S., Baker, R., Andres, A., Biswas, G., Paquette, L., Bosch, N. (2021) Quick Red Fox: Optimizing Computer Assisted Direct Observation to Capture Theoretically-Aligned Student Experiences. Presentation at the ACM Special Interest Group on Design of Communication.

Baker, R.S. (2021) Participation in Panel: Frontiers of AIEd Research. High Touch High Tech (HTHT) Conference on Artificial Intelligence and Education. June 30, 2021.

Baker, R.S. (2021) Q&A with Ryan Baker. Session at Digital Education for a Strong Recovery: A Forward Look: An International Conference Organised by the OECD Centre for Educational Research and Innovation. June 10, 2021.

Baker, R.S. (2021) Informing Adaptive Learning. Invited presentation at the World Artificial Intelligence Conference.

Baker, R.S., Hawn, M.A. (2021) From Algorithmic Bias to Fairer Automated Algorithms in Education. In session Towards "Next Generation" Affirmative and Formative Assessments for Learning, and in the Service of Learning. E.W. Gordon Centennial Conference. June 3, 2021.

Baker, R.S. (2021) Participation on Panel "Building a Multidimensional Future: A Conversation on Big Data and Educational Measurement". National Council on Measurement in Education Annual Meeting, Special Interest Groups in Measurement in Education. June 1, 2021.

Baker, R.S. (2021) Participation on Panel "Self-Regulation and Online Learning". European Association for Research on Learning and Instruction, Metacognition Special Interest Group. May 19, 2021.

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Baker, R.S., Agnihotri, L., Reed, A. (2021) Scaled rapid courseware development using preconfigured courses with instructor and student training modules. Presentation at Pandemic Pedagogy Research Symposium. May 5, 2021.

Baker, R.S. (2020) Data on Interactions Between Students and Online Environments: What do we Learn about Students? Invited presentation at EdCrunch. December 9, 2020.

Baker, R.S. (2020) Learning Analytics: Key Challenges for the Future of the Field. Invited presentation at EdCrunch. December 8, 2020.

Baker, R.S. (2020) Improving Automated Detection of Student Disengagement and Affect. Invited presentation at the NEURIPS 2020 Workshop Advances and Opportunities: Machine Learning for Education, 2020.

Baker R.S. (2020) Towards Learning Analytics on Training Data. Invited presentation to the NATO Training Group Task Group on Individual Training and Education Developments, 2020.

Baker, R.S. (2020) Adaptive Learning and Learning Analytics. Penn China Education Summit, 2020.

Baker, R.S. (2020) Participation on Panel, "Internet Plus Education – the New Wave of Educational Technologies in 2020". Penn China Education Summit, 2020.

Baker, R.S. (2020) Participation on Panel, "Applications of Learning Science to Educational Practice During the Pandemic." IMS Global Learning Consortium, 2020.

Agnihotri, L., Baker, R.S. (2020) Study on Procrastination. CLO Virtual Exchange, 2020.

Baker, R.S. (2020) Leveraging Data to Improve Learning in the Next Normal. Ed Tech Week, 2020.

Baker, R.S. (2019) Participation on Panel "Education Technology". Penn China Education Summit, 2019.

Baker. R.S. (2019) Participation on Panel "Learning Analytics Experts Discussion". iFEST 2019.

Baker. R.S. (2019) Participation on Panel "Improving Students' Learning in Control Education with Data- and Feedback-Driven Methodologies". International Federation of Automatic Control – Advances in Control Education Symposium.

Baker, R.S. (2019) Participation on Panel "Learning Sciences: Design and analysis strategies that promote inclusion and increase access". International Conference on Learning Analytics and Knowledge.

Baker, R.S. (2019) Participation on Panel "Learning Science Truths All Educators Should Know". South by Southwest EDU.

Baker, R.S., D'Mello, S.K., Kai, S., Bosch, P.N., Ocumpaugh, J.L., Shute V. (2019) Affect Detection in Physics Playground. Poster at Technology, Instruction, Cognition, & Learning SIG, American Educational Research Association Conference.

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Rowe, E., Asbell-Clarke, J., Baker, R.S. (2019) Game-Based Measures of Implicit Learning. Poster at American Educational Research Association Conference.

Baker, R.S., Koedinger, K.R. (2019) Educational Data Mining: Proof Cases. Presentation at American Educational Research Association Conference.

Baker, R.S., Koedinger, K.R. (2019) Demonstrating the Value of Educational Data Mining. Presentation at National Council on Measurement in Education.

Baker, R.S. (2019) Session Discussant, Game-Based Assessment: How Has the Field Matured Over the Past 10 Years? American Educational Research Association Conference.

Baker, R.S. (2019) Session Discussant, Testing Strategies, Extended Time Accommodation, and Speededness, Using Process Data in NAEP. National Council on Measurement in Education.

Karumbaiah, S., Baker, R.S. (2019) Predicting Quitting in Students Playing a Learning Game. Presentation at the Bay Area Learning Analytics Network Conference. March 2, 2019.

Baker, R.S. (2018) Measuring Classroom Engagement with BROMP. Breakout session. Alef Education Symposium. Abu Dhabi, United Arab Emirates. October 31, 2018.

Baker, R.S. (2018) Participation in panel A Look into the Future: Contributions from our Societies. London Festival of Learning. London, UK.

Baker, R.S. (2018) Participation in panel Measuring the Impact of Innovative Technologies in Education. International Conference on the Learning Sciences. London, UK.

Baker, R.S. (2017) Participation in panel Learning Analytics. Reimagine Education 2017. Philadelphia, PA.

Baker, R.S. (2017) Participation in panel Technology in Education. 4th Annual NAEP Innovations Symposium. Washington, DC.

Baker, R.S. (2017) Presentation in panel How is Learning Science Research Advancing Innovation in Teaching and Learning? Educause Annual Conference. Philadelphia, PA.

Wang, Y., Baker, R.S. (2017) Beyond Sampling: Exploring how students use MOOCs minimally. Presentation at the 4th Learning with MOOCs Conference. Austin, TX.

Baker, R.S. (2017) Boredom Detection using Data. Presentation at the Northern Kentucky University Research and Innovation Symposium in Education. Highland Heights, KY.

Baker, R.S. (2017) Ethical, Privacy, and Practical Limitations for Learning Analytics. Presentation at the DIMACS/Northeast Big Data Hub Workshop on Privacy and Security for Big Data. Piscataway, NJ.

Baker, R.S. (2017) Building a Masters Level Program. Invited Presentation at the Building the Learning Analytics Curriculum Workshop, LAK 2017.

Baker, R.S. (2017) Data Science for Educational Research, Industry, and Policy. Invited Presentation at the 9th Data Science Showcase. New York, NY.

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Baker, R. (2017) Towards Massive Replication using Data From Massive Online Open Courses. Presentation at the Subway Summit. New York, NY.

Baker, R.S. (2016) Participation in panel Running a Learning Analytics Centre: Stories & Conversations. At Australian Learning Analytics Summer Institute.

Baker, R.S. (2016) Participation in panel Deeper Dive into Assessment Strategies/Types and LA. At Understanding the Role of Learning Analytics in Technology-Enhanced Education. New York University. New York, NY.

Baker, R.S. (2016) Integrating Knowledge Engineering with Data Mining in Measuring Engagement. Invited talk at the 16th Annual Maryland Assessment Conference. College Park, MD.

Baker, R.S. (2016) Measuring Affect and Affect Dynamics in Simulations. Invited talk, Workshop on Machine Learning for Digital Education and Assessment Systems. International Conference on Machine Learning. New York, NY.

Baker, R.S. (2016) Participation in session Information Technologies to Advance Teaching and Learning, at Conversations with Innovators. Philadelphia, PA.

Baker, R.S. (2016) Modeling Complex Skill with Educational Data Mining. Invited talk, International Conference on e-Learning in the Workplace. New York, NY.

Baker, R.S. (2016) Participation in Panel "New Technologies and the Future of Learning Experiences". International Conference on e-Learning in the Workplace. New York, NY.

Baker, R.S. (2016) Comments on the Symposium: "Exploring Timing and Process in Large-Scale Assessments". 2016 Annual Meeting of the National Council on Measurement in Education.

Baker, R.S. (2016) Interaction logs: a powerful tool for studying engagement and learning in a very fine-grained fashion. Invited Presentation at International Perspectives on School Governance: A German-American Seminar. 2016 Annual Meeting of the American Educational Research Association. Washington, DC.

Wang, Y., Baker, R. (2015) Content or Platform? An Alternative Way to Understand MOOC Students. Presentation at Learning with MOOCS II. New York, NY.

Wang, Y., Baker, R., Aleven, V., Rose, C., Sewall, J., Popescu, O., Tomar, G., Feschke, O., Cennamo, M. (2015) Interactive Activities in MOOCs. Poster Presentation at Learning with MOOCS II. New York, NY.

Baker, R.S. (2015) Deep Dive: Models and Design. 12th Annual Online Learning Consortium Blended Learning Conference and Workshop 2015. Denver, CO.

Baker, R.S. (2015) Learning Analytics on a MOOC on Learning Analytics. Invited talk at the V. Jornadas eMadrid sobre "Educacion Digital". Madrid, Spain.

San Pedro, M.O.Z., Baker, R.S., Bowers, A.J., Heffernan, N.T. (2015) Predicting College Enrollment from Machine-Learned Assessments of Knowledge, Academic Emotions and

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Behavior Within an Educational Software. Poster presentation at the 9th Annual Machine Learning Symposium at the New York Academy of Sciences.

Baker, R.S. (2015) O papel de Big Data na transformação da avaliação e do currículo escolar: exemplos de sucesso. 4o seminario internacional: Centro Lemann para Empreendedorismo e Inovacao na Educacao Brasileira. Centro Lemann em Stanford University.

Baker, R.S. (2014) Panel presentation at Inaugural Meeting of the Global Learning Council. Pittsburgh, PA.

Baker, R.S. (2014) Panel presentation at 2nd Annual Executive STEM Summit: Science of Learning. New York, NY.

Wang, Y., Baker, R.S. (2014) MOOC Learner Motivation and Course Completion. Panel presentation at Learning with MOOCs: A Practitioner's Workshop. Cambridge, MA.

Baker, R.S. (2014) Participation in session Invention and Innovation: Revealing the Intangibles of Learning, at Conversations with Innovators. Philadelphia, PA.

Baker, R.S. (2014) Panel presentation at Moocshop 2014 (the 2nd Research-Oriented Workshop on Massive Open Online Courses), at International Conference of the Learning Sciences.

Baker, R.S., Ocumpaugh, J.L., San Pedro, M.O.C.Z., Gowda, S.M., Gowda, S.M. (2014) Studying Student Affect in Computer-Based Learning Environments with Field Observations and Log Files. Panel presentation at American Educational Research Association 2014.

Carvalho, A.M.J, Stahelin, N., Baker, R.S.J. (2014) An Integrative Program Modeling Authentic Field Science Experiences for Students. Presentation at the 43rd North American Association of Environmental Education.

Baker, R.S. (2014) Toward Demonstrating the Value of Learning Analytics for Education. Invited panel presentation at American Educational Research Association 2014.

Baker, R.S.(2014) Invited panel "What is the Future of Online Research Opportunities and the Practical Implications at Scale?". AERA Technology, Instruction, Cognition and Learning Special Interest Group, American Educational Research Association 2014.

Sao Pedro, M.A., Gobert, J.D., Baker, R. (2014) The Impacts of Automatic Scaffolding on Students' Acquisition of Data Collection Inquiry Skills. Roundtable presentation at American Educational Research Association 2014.

Baker, R.S. (2014) What You Can Do With the Data Exhaust. Invited panel presentation at the Online Learning Summit. University of California, Berkeley.

Baker, R.S. (2014) Big Data in Training and Education. Webinar panel for Harrisburg University.

Baker, R. (2013) Learning Analytics. Panel presentation at Ithaka Sustainable Scholarship 2013.

Baker, R.S.J.d. (2013) Towards Using Educational Data Mining to Improve the Assessment of Student Understanding of Ecology. Symposium Presentation at the Annual Meeting of the Ecological Society of America.

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Baker, R.S.J.d. (2013) Culture and Technology. Panel presentation at the 16th International Conference on Artificial Intelligence and Education.

Baker, R.S.J.d. (2013) Building the Educational Data Scientist. Panel presentation at the 2013 Learning Analytics Summer Institute.

Koedinger, K.R., Baker, R.S.J.d. (2013) Data Mining and Intelligent Tutors. Invited presentation at the 2013 Learning Analytics Summer Institute.

Asbell-Clarke, J., Rowe, E., Sylvan, E., Baker, R.S.J.d. (2013) Working through Impulse: Assessment of Emergent Learning in a Physics Game. Symposium presentation at the 9th International Conference on Games, Learning, and Society.

Baker, R.S.J.d. (2013) Multi-Faceted Assessment During Online Learning. Invited Presentation at Distance Education & Online Learning in Physics Workshop of the American Physical Society.

Baker, R.S.J.d. (2013) Future Technologies, Today. Invited Presentation at Apps that Close the Gap Summit.

Baker, R.S.J.d. (2013) Educational Data Mining: Potentials and Possibilities. Symposium presentation at the 2013 Annual Meeting of the American Educational Research Association.

Roll, I., Baker, R. (2013) Using Learning Analytics to Inform Theories of Help-Seeking. Symposium presentation at the 2013 Annual Meeting of the American Educational Research Association.

Gobert, J., Sao Pedro, M., Raziuddin, J., Baker, R. (2013) Developing And Validating EDM-Based Assessment Measures For Measuring Science Inquiry Skill Acquisition And Transfer Across Science Topics. Symposium presentation at the 2013 Annual Meeting of the American Educational Research Association.

Wixon, M., Gobert, J., Baker, R.S.J.d., Bachmann, M. (2013) WTF (Without Thinking Fastidiously) as Predicted by Student Learner Characteristics. Symposium presentation at the 2013 Annual Meeting of the American Educational Research Association.

Baker, R.S.J.d. (2013) We Need More Education Data Scientists. Symposium presentation at the Third International Conference on Learning Analytics and Knowledge.

Baker, R.S.J.d. (2013) Educational Data Mining Essentials. Presentation at Sims and Games Learning Analytics and Educational Data Mining Workshop.

Baker, R.S.J.d. (2012) Show Me The Data: What Automated Detectors Can (and Can't) Do. Invited presentation at the Engagement and Academic Tenacity Convening. Cambridge, MA, USA.

Blikstein, P., Worsley, M., Sherin, B., Baker, R., Berland, M., Martin, T., Roll, I., Aleven, V., Koedinger, K., Hershkovitz, A. (2012) Building Bridges between Learning Analytics, Educational Data Mining, and Core Learning Sciences Perspectives. Symposium at the 10th International Conference of the Learning Sciences.

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Baker, R.S.J.d. (2011) Tracking Student Engagement during Learning from Educational Software. Invited presentation at the Massachusetts STEM Summit.

Gobert, J.D., Baker, R.S.J.d., Sao Pedro, M. (2011) Using Machine-Learned Detectors to Assess and Predict Students' Inquiry Performance. Presentation at the 2011 Fall Meeting of the Society for Research on Educational Effectiveness.

Baker, R.S.J.d. (2011) Observational and Log Analysis Methods for Assessing Engagement and Affect in Educational Games. Presentation at Games for Learning Day at Games For Change 2011.

Hausmann, R.G.M., Youngblood, M., Lane, H.C., Baker, R.S.J.d. (2011) Game-Based Intelligent Tutoring Systems. Panel session at FLAIRS-24.

Castro, M.J., Cárdenas, E.S., Ogan, A., Baker, R.S.J.d. (2011) Tutor Cognitivo y el incremento de aprendizaje en matemática. (Cognitive Tutors and Learning Gains in Mathematics). *CIAEM 2011: XIII Conferencia Interamericana de Educación Matematica.*

Gobert, J.D., Montalvo, O., Toto, E., Sao Pedro, M., Baker, R.S.J.d. (2010) The Science Assistments Project: Scaffolding Scientific Inquiry Skills. Interactive Event at *10th International Conference on Intelligent Tutoring Systems.* **[People's Choice Award for Best Interactive Event]**

Goldstein, A.B., Baker, R.S.J.d., Heffernan, N.T. (2010) Pinpointing Learning Moments: A finer grain P(J) model. Poster abstract. *Proceedings of the 3rd International Conference on Educational Data Mining,* 289-290.

Baker, R.S.J.d., de Carvalho, A.M.J.B., Raspat, J., Aleven, V., Corbett, A.T., Koedinger, K.R. (2010) Using Taxonomies and Educational Data Mining to Understand How Educational Software Design Impacts Gaming the System. Presentation at Symposium at the 2010 Annual Meeting of the American Educational Research Association.

Lee, D.M.C., Ramos, C.C., Sy, C.W.C., Rodrigo, M.M.T., Baker, R.S.J.d. (2010) Detecting Boredom and Confusion among Novice Programmers using BlueJ Compile Logs. Poster at Philippine Computing Society Congress 2010.

Baker, R.S., Corbett, A.T., Aleven, V. (2009) Determining when an error is actually a slip. Presentation in Educational Data Mining: Seeing How Students Really Err. Symposium at the 13th Biennial Conference of the European Association for Research on Learning and Instruction.

Rodrigo, M.M.T., Baker, R.S.J.d., Abalos, N., Bacuyag, K., Basuel, B., Bautista, M., Cortez, M., Dulla, G., Elomina, S., Gineta, M.A., Rara, A., Rodriguez, R., Sanggalang, J., Sugay, J., Tan, A.K., Tan, M., Trajano, E., Uy, F., Victorino, N., Villaflor, K. (2009) A comparison of learners' affect and behaviors while using an intelligent tutor and an educational game. Presentation at Philippine Computing Society Congress 2009.

Rodrigo, M.M.T., Baker, R.S., Sugay, J.O., Tabano, E. (2009) Monitoring novice programmer affect and behaviors to identify learning bottlenecks. Presentation at Philippine Computing Society Congress 2009.

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Baker, R.S.J.d., Koedinger, K.R. (2008) Educational Data Mining: Opportunities for the International Internet Classroom. Presentation at *AAAI Fall Symposium: Education Informatics: Steps Towards the International Internet Classroom.*

Baker, R.S.J.d, Aleven, V., Koedinger, K.R., Rodrigo, M., Heffernan, N.T., Corbett, A.T., Roll, I. (2008) Gaming the System: Evidence from Data Mining and Human Observation on Affect, Attitudes, and Learning. Presentation at *Technology, Instruction, Cognition, and Learning Symposium*.

Koedinger, K.R., Aleven, V., Baker, R.S.J.d., Roll, I. (2007) Toward Understanding When Tutoring Meta-Cognition Enhances Domain Learning. *Workshop on Metacognition and Self-Regulated Learning in Intelligent Tutoring Systems*, 1-2.

Baker, R.S. (2006) Educational Data Mining. Panel "Intelligent Tutoring Scales Up!" at *8th International Conference on Intelligent Tutoring Systems*.

Koedinger, K.R., Baker, R.S. (2006) Production Systems. *Presentation at the TICL Masters Conference*.

Baker, R.S., Beck, J.S. (2005) Psychometric Machine-Learned Models. *Presentation at the Educational Data Mining Workshop at the annual meeting of the American Association for Artificial Intelligence*.

Rosé, C.P., Anthony, L., Baker, R.S., Corbett, A.T., Pain, H., Porayska-Pomsta, K. (2004) Towards Encouraging a Learning Orientation Above a Performance Orienation. Panel at *7th International Conference on Intelligent Tutoring Systems,* 907.

Baker, R.S., Corbett, A.T., Koedinger, K.R. (2003) Statistical Techniques For Comparing ACT-R Models of Cognitive Performance. *Proceedings of the 10th Annual ACT-R Workshop*, 129-134.

Baker R.S., Corbett A.T., Koedinger K.R. (2002) Distinct Errors Arising From a Single Misconception. Published as abstract, *Proceedings of the Cognitive Science Society Conference*, 990.

Baker R., Parberry I. (1996) Increasing Frame Rate In An Interactive Sprite Engine. Published as abstract, *Texas Academy of Science Conference*.

Humor Articles

Baker, R.S. (2002) The Sleep-Retardant Properties of My Ex-Girlfriend. *Annals of Improbable Research, 8* (3), 9-11. Re-printed in *American Physical Society (APS) News*, February 2004, 13 (2)

Baker, R.S., Baker, R.S., Baker, R.S. (2002) Collaborative Research Across Alternate Universes. *Psychology Postgraduate Affairs Group Quarterly.*

Other Publications

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Ocumpaugh, J., Paquette, L., Baker, R., Barany, A., Ginger, J., Casano, N. Zambrano, A., Liu, X., Wei, Z., Zhou, Y., Liu, S., Hutt, S., Andres, A., Nasiar, A., Giordano, C., van Velsen, M., Mogessie, M. (2025) *The Quick Red Fox gets the best Data Driven Classroom Interviews: A manual for an interview app and its associated methodology, Version 1.0*. Technical Report: University of Houston, University of Illinois Urbana Champaign, University of Pennsylvania.

Maheshwari, A., Baker, R., Banerjee, S. (2024) Top Parent's Journey in Transforming Early Childhood Education for Low-income Families. Guest article, Central Square Foundaton.

Baker, R.S. (2021) To Make a Difference with Learning Technology, Focus on How it Will Be Used. Guest column, Educational Technology Digest.

Baker, R.S. (2023) *Big Data and Education.* Online open textbook.
1st edition (2013); 2nd edition (2015); 3rd edition (2017); 4th edition (2018); 5th edition (2019); 6th edition (2020); 7th edition (2023)
http://www.upenn.edu/learninganalytics/MOOT/bigdataeducation.html

Baker, R.S. (2018) *Knowledge Inference and Structure Discovery for Education.* Self-paced MOOC.

Ocumpaugh, J., Baker, R.S., Rodrigo, M.M.T. (2015) *Baker Rodrigo Ocumpaugh Monitoring Protocol (BROMP) 2.0 Technical and Training Manual.*. Technical Report. New York, NY: Teachers College, Columbia University. Manila, Philippines: Ateneo Laboratory for the Learning Sciences.

Ocumpaugh, J., Baker, R.S.J.d., Rodrigo, M.M.T. (2012) *Baker-Rodrigo Observation Method Protocol (BROMP) 1.0. Training Manual version 1.0*. Technical Report. New York, NY: EdLab. Manila, Philippines: Ateneo Laboratory for the Learning Sciences.

Baker, R.S.J.d. (2012). Guessing and Learning. In N.M. Seel (Ed.), *Encyclopedia of the Sciences of Learning* (pp. 1397-1398). Heidelberg, Germany: Springer-Verlag.

Baker, R.S.J.d. (2012). Guessing Model. In N.M. Seel (Ed.), *Encyclopedia of the Sciences of Learning* (pp. 1398-1399). Heidelberg, Germany: Springer-Verlag.

PATENTS

Gobert, J., Baker, R. S., Sao Pedro, M. (awarded, June 21, 2016). Inquiry Skills Tutoring System. US Patent no. 9373082.

Gobert, J., Sao Pedro, M., Betts, C., & Baker, R.S. (awarded, February 7, 2017). Inquiry Skills Tutoring System (Child Patent for Alerting System). US Patent no. 9564057.

GAMES

Baker, R.S., Baker, M.T. (2015) *Academic Squabble.*
http://www.columbia.edu/~rsb2162/AcademicSquabble/academic-squabble.html

Baker, R.S., LaPointe, F. (1992) *Crunch!*

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INVITED SEMINARS/CONFERENCE PLENARY TALKS

Where are the Affect Detectors in Educational Practice. Keynote, Empathic Computing Frontier Forum. October 12, 2026.

The Role of AI in Supporting Learning and Educational Research. Keynote, Racing the Clock: Education's Response to AI's Rapid Rise. Brisbane, QLD. October 1, 2026.

AI Project Feedback: Do Students Actually Learn? School of Computing, Australia National University. September 4, 2026.

Artificial Intelligence and Qualitative Research: Opportunities and Challenges. Colloquium talk, INVITE Institute, University of Illinois/University of Florida/Temple University/Educational Testing Service. August 5, 2026.

Educational Data Mining: Potential for South Australia. Lunchbox lecture, Department for Education, South Australia. July 29, 2026.

Knowledge Tracing and Generative AI. Colloquium talk, Melbourne Metrics, University of Melbourne. June 4, 2026.

AI Project Feedback: Do Students Actually Learn? Colloquium talk, AI in Education Research Cluster, School of Education, Curtin University. May 20, 2026.

AI Project Feedback: Do Students Actually Learn? Keynote, 6th International Conference on Education, Research and Innovation. May 12, 2026.

Using Large Language Models to Support Learners in Higher Education. Colloquium talk, School of Computer Science, Adelaide University. April 28, 2026.

AI Project Feedback: Do Students Actually Learn? Colloquium talk, Center for Learning Analytics Monash, Monash University. March 11, 2026.

Technologies and Educational Resources of the Future: the Potential of Learning Analytics. Colloquium talk, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology. March 6, 2026.

Using Large Language Models to Support Learners in Higher Education. Keynote, Chonnam International Symposium. January 10, 2026.

Human-LLM Partnership for Qualitative Coding of Educational Data. Colloquium, Educational Technology, Research, and Assessment (ETRA) Department, Northern Illinois University. November 11, 2025.

Technologies and Educational Resources of the Future: the Potential of Learning Analytics. XIV Nazarbayev International Schools Conference 2025. Astana, Kazakhstan, October 30, 2025.

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Utilizando LLMs para Apoyar Estudiantes en la Educación Superior: JeepyTA. Keynote, New Technologies in Higher Education. Universidad Norbert Wiener (Online talk). September 12, 2025.

Affect Detectors Have Scaled in Research but not in Practice. Prof. Ram Kumar Educational Data Mining Test of Time Award Talk, International Conference on Educational Data Mining. Palermo, Italy. July 21, 2025.

Supporting and Studying Student Learning from Feedback with LLMs in CS1/CS2. Keynote, 9th Educational Data Mining in Computer Science Education (CSEDM) Workshop. Palermo, Italy. July 20, 2025.

Affect Detectors Have Scaled in Research but not in Practice. Hong Kong Polytechnic University. July 17, 2025.

Partnering with an LLM for Qualitative Coding of Educational Data. University of Virginia School of Education & Human Development. May 12, 2025.

Using Large Language Models to Support Learners and Learning. University of Virginia School of Education & Human Development. February 15, 2025.

Using Large Language Models to Support Learners and Learning. Keynote, Conference on Advancing AI in Science Education (AASE). AI4STEM Education Center, University of Georgia. February 3, 2025.

Using Large Language Models to Support Learners and Learning. Keynote, Higher Education in the Age of Artificial Intelligence (AI): Challenges and Perspectives, University of Oujda, Morocco. December 18, 2024.

Human-LLM Partnership for Qualitative Coding of Educational Data. Keynote, International Conference on Education and E-Learning. November 24, 2024.

O Bias em Algoritmos de Inteligencia Artificial Aplicados à Educação. Keynote, Congresso Brasileiro de Informática na Educação. November 7, 2024.

Masterclass on 'Data-driven decision making for EdTechs'. Central Square Foundation. October 21, 2024.

Using Large Language Models to Support Learners and Learning. Keynote, Assessment and Teaching Conference, University of Pittsburgh. October 4, 2044.

Large Language Models to Improve Feedback in Online Higher Education. Keynote, 6th International Conference on Higher Education Learning Methodologies and Technologies Online. September 25, 2024.

Using Large Language Models to Support Learners and Learning. Keynote, International Conference on Big Data in Education. September 25, 2024.

Using Large Language Models to Support Learners and Learning. Centre for the Study of Higher Education, University of Melbourne. August 16, 2024.

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JeepyTA: Using a Large Language Model to Support Tertiary Instructors and Students. Keynote, ASK4AI Melbourne Summit, Melbourne, Victoria, Australia. August 15, 2024.

Towards Human-LLM Partnership for Qualitative Coding. Faculty of Information Technology, Monash University. August 14, 2024.

Using Large Language Models to Support Learners and Learning. School of Electrical Engineering and Computer Science, University of Queensland. August 13, 2024.

Using Large Language Models to Support Learners and Learning. UniSA Education Futures, University of South Australia. August 8, 2024.

Using Large Language Models to Support Learners and Learning. Basser Seminar, School of Computer Science, University of Sydney. August 6, 2024.

Human-LLM Partnership for Qualitative Coding. RTI International. July 23, 2024.

Artificial Intelligence in Research. Keynote, Annual Doctoral Student Association (DSA) Conference, Franklin University. June 21, 2024.

Using Large Language Models to Code Qualitative Data and Act as a Teaching Assistant. College of Education and Human Development, University of Delaware. May 8, 2024.

Detector-Driven Classroom Interviewing: Focusing Qualitative Researcher Time by Selecting Cases in Situ. IES Predoctoral Seminar, University of Pennsylvania. April 5, 2024.

Baker, R.S. (2024) Recent work on large language models in education at the PCLA. Keynote talk at the Workshop on Generative AI for Learning Analytics (GenAI-LA): Exploring Practical Tools and Methodologies, LAK2024. March 17, 2024.

Algorithmic Bias: The State of the Situation Worldwide. Inaugural talk, African Network for Learning Analytics Research. February 29, 2024.

Using Large Language Models to Assess Students and Code Qualitative Data. School of Information, University of British Columbia. February 26, 2024.

De-Identifying Student Personally Identifying Information with GPT-4. Million Tutor Moves Observatories Meeting. February 23, 2024.

JeepyTA and Qualitative Coding: Recent work on large language models in education at the PCLA. Keynote talk, The Learning Ideas Conference Winter Online Event. February 15, 2024.

Inteligencia Artificial Generativa y Educación: Lo Nuevo y Lo Que Podemos Hacer. Keynote, Institute for the Future of Education Conference. Monterrey, Mexico. January 24, 2024.

Como a IA Gerativa pode apoiar o processo de avaliação? Centre for AI and Education in Brazil, Recife, Pernambuco, Brasil (virtual). October 26, 2023.

Algorithmic Bias in Education: The Problem and the Debate About What to Do. Cornell University, Department of Information Science. October 25, 2023.

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Recent work on large language models in education at the PCLA. American Institutes for Research. October 23, 2023.

An Introduction to LLMs: Really Abridged Version. Center for Research on Complex Thinking, University of Wisconsin. September 13, 2023.

Foundation Models and Large Language Models in Higher Education. University of Utah, College of Social and Behavioral Sciences (virtual presentation). August 21, 2023.

When Might a Detector Generalize? Keynote, International Conference on Big Data and Education. Jinan, China (virtual keynote). June 17, 2023.

Potential of Data Mining in Education. St. Paul University Philippines School of Nursing and Allied Health Sciences (virtual presentation). June 1, 2023.

Detecting SMART Model Cognitive Operations in Mathematical Problem-Solving Process. Gordon Seminar on Assessment in the Service of Learning. February 17, 2023.

When Might a Detector Generalize? Keynote, International Conference on Computers in Education. Kuala Lumpur, Malaysia. November 30, 2022.

Iterative Refinement of an AIS Rewards System. SIGCSE Seminar, University of Delaware. November 11, 2022.

Big Data and Education. Invited talk, EdTech Forum. September 22, 2022.

Learning Engineering aka So You Want to Make your Professional Learning System Better. Brown Bag Seminar, The Research Partnership for Professional Learning. September 20, 2022.

Algorithmic Bias in Education. Invited talk, 5th Impact Summit. August 13, 2022.

Investigations into Deep Knowledge Tracing: From Cold-Start to Real Life. Invited talk, AIED Summer Camp, Central China Normal University. June 27, 2022.

Data-driven classroom interviews, rapid observations, and interaction detectors: Modern mixed methods at the Penn Center for Learning Analytics. Invited seminar, Convergence Research Center for Immersive Learning Technology, Chonnam University. June 23, 2022.

Algorithmic Bias in Education. Keynote, The Learning Ideas Conference. June 17, 2022.

Learning Engineering aka So You Want to Make Your Learning System Better. Invited seminar at OnDeck EdTech. March 1, 2022.

Opportunities for Learning Engineering: Findings from an Asynchronous Virtual Convening. Keynote at International Conference on Big Data and Education. February 26, 2022.

Algorithmic Bias in Education. Keynote talk, 2021 International Conference on Artificial Intelligence and Big Data in Education. November 16, 2021.

Algorithmic Bias in Education. Keynote talk, Learning Analytics Workshop at DELFI2021. September 13, 2021.

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Investigations into Deep Knowledge Tracing: From Cold-Start to Real Life. Keynote, 25th Global Chinese Conference on Computers in Education. September 13, 2021.

Longitudinal Implications of Wheel Spinning and Productive Persistence. Webinar, Asia-Pacific Society for Computers in Education. September 10, 2021.

Algorithmic Bias in Education: From Unknown Bias to Known Bias to Fairness to Equity. Responsible Data Science and AI Speaker Series, University of Illinois Urbana-Champaign. September 10, 2021.

Quick Red Fox: Optimizing Classroom Interviews with SRL and Affect Detection. Learning Analytics Learning Network. August 16, 2021.

Informing Adaptive Learning. Invited talk, World Artificial Intelligence Conference 2021. July 8, 2021.

Opportunities for Learning Engineering and Educational Data Mining: Findings from an Asynchronous Virtual Convening. Keynote, Learner Data Institute Workshop at the International Conference on Educational Data Mining. June 29, 2021.

Automated Detection of Computational Thinking from Gameplay (with Elizabeth Rowe and Mia Almeda). Colloquium talk, Computing Education Reading Group, Brown University. June 22, 2021.

Modalegem profunda de conhecimento (deep knowledge tracing): uma extensão para inferir conhecimento interpretável e predizer fora do sistema. Colloquium talk, Programa de Pós-graduação em Computação Aplicada, Universidade do Vale do Rio dos Sinos (Unisinos). May 27, 2021.

Algorithmic Bias in Education (with M. Aaron Hawn). Learning Analytics Learning Network. May 25, 2021.

Learning Analytics: Potential for Transformation in Education and Educational Research. Invited colloquium talk at the Education University of Hong Kong. May 20, 2021.

Six Challenges for the Future of Artificial Intelligence in Education. Education Data Science Undergraduate Fellowship, University of California, Berkeley. April 17, 2021.

Six Challenges for the Future of Artificial Intelligence in Education. AAAI Spring Symposium on Artificial Intelligence for K-12 Education. March 22, 2021.

Learning Analytics. Center for Teaching and Learning. Chung-Ang University. January, 2021.

Six Challenges for the Future of Artificial Intelligence in Education. Department of Computer Science. North Carolina State University. December 15, 2020.

Learning Analytics: Potential Opportunities for e-Learning in the Workplace. Keynote at the 2020 Conference of the Korea Association of Human Resources Development. October 24, 2020.

Data Mining: Potentials for Education. Keynote at EnlightenEd. October 22, 2020.

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Feature Engineering: Better, More Interpretable Models. Learning Analytics Learning Network. August 24, 2020.

Six Challenges for the Future of Artificial Intelligence in Education. Intelligent Adaptive Learning Webinar Series, East China Normal University. July 24, 2020.

The State of Educational Data Mining in 2009 and Today: Then, Now, and Forward. Prof. Ram Kumar Educational Data Mining Test of Time Award Talk. July 13, 2020.

Potential Opportunities for e-Learning in the Workplace. Keynote talk at the International Conference on e-Learning in the Workplace. June 10, 2020.

The Dynamics of Affect in Online Learning. Department of Educational Psychology, University of Wisconsin. February 4, 2020.

Challenges for the Future of Artificial Intelligence in Education. Alelo Webinar Series on the Future of AI in Education and Training. October 16, 2019.

Educational Data Mining and Learning Analytics. Cengage. September 5, 2019.

Educational Data Mining and Learning Analytics for Researching and Assessing Learning. Lynch School of Education and Human Development, Boston College. March 26, 2019.

Some Challenges for the Next 18 Years of Learning Analytics. Keynote address, 9th International Conference on Learning Analytics. March 6, 2019.

Some Challenges for the Next 18 Years of Learning Analytics. School of Information, University of Michigan. February 26, 2019.

Towards Development of Better Real-Time Sensor-Free Detectors of Affect. Educational Technology Department, Indian Institute of Technology Bombay (remote talk). February 15, 2019.

Learning Analytics: Potentials for Future K-12 Classroom Assessment. Keynote address, KICE (Korea Institute for Curriculum and Evaluation) International Seminar: New Direction for Educational Assessment in 2030 Korea. Seoul, South Korea. November 23, 2018.

Learning Analytics: Promises and Limitations. Department of Education, Seoul National University. November 22, 2018.

Learning Analytics: Potential for Transformation in Education. Alef Education Symposium. Abu Dhabi, United Arab Emirates. October 31, 2018.

Big Data and Education. Teach for All (webinar). October 29, 2018.

The Dynamics of Affect in Online Learning. Concord Learning Seminar (webinar), Concord Consortium. October 17, 2018.

Learning Analytics: Promises and Limitations. Center for Teaching Advancement and Assessment Research, Rutgers University. October 15, 2018.

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Towards Understanding App Effectiveness and Cost. Making Data C.A.R.E: BrightBytes Big Data Summit 2018. Cedar Creek, TX. October 11, 2018.

The Dynamics of Affect in Online Learning. Office of Open Learning xTalk, Massachusetts Institute of Technology. September 26, 2018.

Leveraging Educational Data Mining Techniques to Determine Factors Impacting Military-Connected Students. Distinguished Lecture (with Andrew Berning), 20th Annual National Training Seminar, Military Child Education Coalition. Washington, DC. July 24, 2018.

Studying Carelessness in Online Learning. American Institutes for Research. July 11, 2018.

Towards Massive Replication of Scientific Findings in Massive Online Open Courses. University of North Texas. February 1, 2018.

Data Mining in Education. TERC. January 29, 2018.

Towards Development of Better Real-Time Sensor-Free Detectors of Student Affect. Washington University in St. Louis. January 19, 2018.

Towards Massive Replication of Scientific Findings in Massive Online Open Courses. Massachusetts Institute of Technology, Teaching Systems Laboratory. December 1, 2017.

Long-Range Predictions of Student Success. LRNG Brown Bag Webinar. November 9, 2017.

Towards Massive Replication of Scientific Findings in Massive Online Open Courses. St. John's University. November 6, 2017.

Turning Big Data into Big Benefits for Students. Keynote address, Tech and Learning Leadership Event. Denver, CO. October 26, 2017.

Towards Massive Replication of Scientific Findings in Massive Online Open Courses. Cognitive Science Colloquium, Indiana University. October 16, 2017.

Modeling Complex Skill in Open-Ended Learning. Webinar, Hewlett Foundation Assessment Cluster. October 5, 2017.

Towards Massive Replication of Scientific Findings in Massive Online Open Courses. University of Oklahoma. September 13, 2017.

Towards Faster Development of Better Affect Detectors. Intel. August 14, 2017.

Integrating Knowledge Engineering with Data Mining in Measuring Engagement. ACT, Inc. July 11, 2017.

Modeling wheel-spinning and productive persistence in middle school mathematics. ACT, Inc. July 11, 2017.

Towards Massive Replication of Scientific Findings in Massive Online Open Courses. University of Illinois Urbana-Champaign, National Center for Supercomputer Applications. April 14, 2017.

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Ryanalytics: Using data to improve my scientific productivity and life. PIER Brown Bag Series, Carnegie Mellon University. Feb 28, 2017.

Predicting Short-Term Success and Longer-Term Participation from MOOC Engagement. PIER Speaker Series, Carnegie Mellon University. Feb 27, 2017.

Predicting Short-Term and Long-Term Success from MOOC Engagement. University of Michigan. February 6, 2017.

Discussion Forum and Interaction Data for Predicting Success from MOOCs. Featured speaker, 4th International Conference on Writing Analytics. January 13, 2017.

Learning Analytics and Educational Data Mining: Opportunities for Industry. Keynote address, Industrial Meeting on Big Data in Education in China. Beijing, China (remote presentation). January 10, 2017.

Modeling Complex Skill with Educational Data Mining. IEEE Signal Processing Society, Princeton/central New Jersey section. December 15, 2016.

Engagement and Success in Online Learning: Tertiary Education and Beyond. Keynote talk at Australasian Society for Computers in Learning in Tertiary Education. November 28, 2016.

Massive Replication of Scientific Findings in Massive Online Open Courses. Keynote talk at Australian Learning Analytics Summer Institute. November 27, 2016.

Modeling Complex Skill with Educational Data Mining. Center for Research on Learning and Instruction. University of Sydney. November 25, 2016.

Ethical Applications of Learning Analytics in a Complex and Changing World. Connected Intelligence Center, University of Technology Sydney. November 24, 2016.

Learning Analytics in a Complex and Changing World. Teachers College, Columbia University. October 31, 2016.

Engagement and Success in Online Learning: Higher Education and Life-Long Learning. Rutgers University. October 19, 2016.

Engagement and Success in MOOCs. University of Oklahoma. August 1, 2016.

Engagement and Success in Online Learning: Higher Education and Beyond. LINK Research Lab, University of Texas Arlington. July 29, 2016.

Welcome. NY LASI (Learning Analytics Summer Institute) Local 2016. New York, NY. June 27, 2016.

Data Mining in Education. Data Science in Education Meetup. Boston, MA. June 20, 2016.

Learning Analytics – Key Considerations. Invited talk at Quality Assurance Agency Scottish Higher Education Enhancement Committee Learning Analytics Briefing. Edinburgh, Scotland. May 2, 2016.

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Long-Term and Actionable Prediction of Student Outcomes Using Automated Detectors of Engagement and Affect. Moray House School of Education, University of Edinburgh. May 2, 2016.

Using Learning Analytics to Study Engagement and Success in Higher Education. Faculty of Science and Engineering, University of Wolverhampton. April 26, 2016.

How We Learn. Future of Learning Forum, Columbia Business School, Columbia University. March 4, 2016.

Engagement and Success in Online Learning: Higher Education and Beyond. Center for Teaching and Learning. St. John's University. February 16, 2016.

Long-Term and Actionable Prediction of Student Outcomes Using Models that Infer Engagement and Affect Automatically From Online Learning Logs. Data Science Talk Series. Rutgers University Newark. February 5, 2016.

Learning Analytics and Educational Data Mining: Opportunities for K12. K12. November 18, 2015.

Long-Term and Actionable Prediction of Student Outcomes Using Automated Detectors of Engagement and Affect. City University of New York, Graduate Center. November 5, 2015.

Research in the MOOC Big Data in Education. Plenary address at the Third Meeting of Computational Behavioral Sciences. Wuhan, China. October 12, 2015.

The Emergence of Big Data in Education. School of Psychology, Central China Normal University. October 11, 2015.

Towards Long-Term and Actionable Prediction of Student Outcomes using Automated Detectors of Engagement and Affect. Department of Educational Psychology (Quantitative Methodology), University of Georgia. September 18, 2015.

Detecting Engagement Automatically with a Combination of Data Mining and Knowledge Engineering. CRESST Conference 2015. August 20, 2015.

Educational Data Mining: Opportunities and Potential. University of Oklahoma. August 6, 2015.

Predicting Learner Outcomes with Learning Analytics. Blackboard DevCon 2015. July 20, 2015.

Predictive Analytics for Education. Presentation to the Educational Data Mining/Learning Analytics Meetup, New York, NY. July 14, 2015.

Intelligent Tutoring Systems and MOOCs. Keynote presentation at the 2nd Symposium of Learning Science and Online Education (with Xiangen Hu). July 9, 2015.

Educational Data Mining: Potentials for MOOCs and Blended Learning in Higher Education. Plenary Address at the 12th Annual Online Learning Consortium Blended Learning Conference and Workshop 2015. July 8, 2015.

]

Personal Knowledge/Learning Graph. Keynote presentation at the 8th International Conference on Educational Data Mining (with George Siemens and Dragan Gasevic). June 26, 2015.

Learning Analytics: What the Research Says. London Knowledge Lab. May 28, 2015.

Educational Data Mining: Potential for Online Training. National Center for Disaster Preparedness. April 23, 2015.

Predictive Analytics for Education. Presentation to the Educational Data Mining/Learning Analytics Meetup, Boston MA. April 8, 2015.

Engagement in Reasoning Mind Classrooms. Keynote presentation at GENIECON. February 28, 2015.

Towards Long-Term and Actionable Prediction of Student Outcomes using Automated Detectors of Engagement and Affect. Institute for Quantitative Theory and Methods, Emory University. February 9, 2015.

Towards Measuring Engagement and Affect in Online Learning. EdX. February 5, 2015.

Towards Long-Term and Actionable Prediction of Student Outcomes using Automated Detectors of Engagement and Affect. Frontier Lecture Series. Department of Teaching, Learning, and Culture. Texas A&M University. December 4, 2014.

Educational Data Mining: A Revolution in Methods for Understanding Learners and Learning. Faculty of Mathematics, Moscow State Pedagogical University. November 21, 2014.

Educational Data Mining: A New Generation of Methods for Understanding Learners and Learning. Faculty of Business Informatics, National Research University: Higher School of Economics. November 18, 2014.

Educational Data Mining: Potential for Medical Education. New York University School of Medicine. November 12, 2014.

Long-Term Predictions of Student Outcomes From Engagement in Online Learning. Institute of Education, Tsinghua University. October 23, 2014.

Studying Moment-by-Moment Learning. School of Psychology. Central China Normal University. October 21, 2014.

Towards Detecting Student Inquiry Skill in Microworlds and Virtual Environments. School of Psychology. Central China Normal University. October 20, 2014.

Big Data Mining in the Field of Education. Conference on Computational Behavioral Sciences & The 2nd Symposium on Internet Research and Social Alarm. October 18, 2014.

Student Engagement in Digital Learning. Public webinar in coordination with Reasoning Mind. October 7, 2014.

Analitica de Aprendizaje. 11o Congreso Internacional y 8o Nacional de Informatica y Sistemas. October 3, 2014.

]

Towards Better and More General Prediction Models of Engagement. LINK Lab, University of Texas, Arlington. September 29, 2014.

Big Data in Education Research. Institute of Education Sciences Principal Investigator Meeting. September 3, 2014.

Educational Data Mining: A Revolution in Methods for Understanding Learners and Learning. Department of Computer Science and Automation. Indian Institute of Science. July 18, 2014.

Advancing the Science of Learning with Educational Data Mining. Public lecture. Coimbatore, India. July 16, 2014.

Predicting Longer-Term Outcomes From Automated Measures of Engagement and Affect. NorthEast Regional Computing Program Workshop on Analytics in Higher Education. June 16, 2014.

Towards Long-Term and Actionable Prediction of Student Outcomes using Automated Detectors of Engagement and Affect. School of Education and Social Policy. Northwestern University. May 1, 2014.

Measuring Learner Engagement with Data Mining. National Conference on Measurement in Education. April 4, 2014.

Studying the Antecedents of Eureka Moments During Learning. Institute for Intelligent Systems. University of Memphis. March 18, 2014.

Towards Long-Term and Actionable Prediction of Student Outcomes using Automated Detectors of Affect and Engagement. Graduate School of Education. Harvard University. March 11, 2014.

Advancing the Science of Learning with Educational Data Mining. Indian Institute of Technology Madras Research Park. February 14, 2014.

Learning Analytics: Potential and Principles. Association for Educational Communications and Technology (AECT) RTD Webinar Series. February 6, 2014.

Towards Long-Term and Actionable Prediction of Student Outcomes using Automated Detectors of Engagement and Learning. Learning Sciences Institute, Arizona State University. November 22, 2013.

Using Educational Data Mining to Study Problem Behaviors in Online Learning. Association for Behavior Analysis International (ABAI), Second Education Conference. Chicago, IL. November 9, 2013.

Adaptive Learning. Cambridge University Press. October 8, 2013.

Educational Data Mining. Pearson, Inc. August 21, 2013.

Predicting Preparation for Future Learning Better Using Quantitative Analysis of Moment-by-Moment Learning. ETS. July 24, 2013.

]

EDM in a Complex and Changing World. Keynote Address. 6th International Conference on Educational Data Mining. Memphis, Tennessee. July 9, 2013.

Envisioning the Future of Cyberlearning. Keynote address. Cyberlearning: Synthesis and Envisioning 2013. Arlington, Virginia. June 26, 2013.

Affect, Collaboration, and Off-Task Behavior in the Chemistry Virtual Lab. Minerva University. April 30, 2013.

Educational Data Mining: Towards Long-Term and Actionable Prediction of Student Outcomes. College of Education and Human Development. University of Wisconsin. April 19, 2013.

Towards Detecting Student Inquiry Skills in Microworlds and Virtual Environments. Educational Measurement and Applied Cognitive Sciences Research Unit. University of Luxembourg. April 9, 2013.

Modeling Student Learning, Moment-by-Moment. Center for Research and Evaluation of Advanced Technologies in Education. New York University. March 1, 2013.

Educational Data Mining: Predict the Future, Change the Future. Data Mining Possibilities Seminar Series. City University of New York Graduate Center. February 15, 2013.

Modeling Student Learning, Moment by Moment. Reasoning Mind. February 7, 2013.

Towards Detecting Student Inquiry Skills in Science Microworlds. New York Hall of Science, December 21, 2012.

Educational Data Mining: A Revolution in Methods for Understanding Learners and Learning. Electrical Engineering and Computer Science Department. University of Toledo. December 3, 2012.

Educational Data Mining: Predict the Future, Change the Future. Julius and Rosa Sachs Distinguished Lecture. Teachers College, Columbia University. November 5, 2012.

Studying Student Disengagement with Educational Data Mining. Institute of Cognitive Science, University of Colorado, Boulder. October 26, 2012.

Modeling Student Learning, Moment-by-Moment. Department of Computer Science, University of Colorado, Boulder. October 25, 2012.

Using Educational Data Mining to Detect Disengagement. Reasoning Mind. October 23, 2012.

Towards Automatically Detecting the Robustness of Student Learning. Computer Science and Artificial Intelligence Laboratory, Massachusetts Institute of Technology. August 31, 2012.

Modeling the Learning in 4-D. Keynote Address. 20th International Conference on User Modeling, Adaptation, and Personalization. July 18, 2012.

Educational Data Mining Methods for Modeling and Studying Gaming the System in Educational Software. ETS. April 24, 2012.

]

Studying Student Disengagement and the Robustness of Learning with Educational Data Mining. BBN Technologies, Cambridge, Massachusetts. February 3, 2012.

Towards Automatically Detecting the Robustness of Student Learning. AAALab/LIFE Center, School of Education, Stanford University, September 30, 2011.

Towards Automatically Detecting the Robustness of Student Learning. Pittsburgh Science of Learning Center Colloquium, Carnegie Mellon University, May 23, 2011.

Towards Automatically Detecting the Robustness of Student Learning. Invited Talk, Intelligent Tutoring Systems Track. 24th Florida Artificial Intelligence Research Society Conference. Palm Beach, Florida. May 19, 2011.

Using Educational Data Mining to Detect Disengagement and the Moment of Student Learning. Teachers College, Columbia University. March 23, 2011

Using Educational Data Mining to Detect the Moment of Student Learning. 11th Philippine Computing Science Congress (PCSC2011). Naga, Bicol, Philippines. March 4, 2011.

Using Educational Data Mining to Detect the Moment of Student Learning. Department of Computer Science, University of the Philippines Diliman. February 28, 2011.

Educational Data Mining: A Revolution in Methods for Understanding Learners and Learning. University of Veracruz, Mexico (by videoconference). May 28, 2010.

Intelligent Tutoring Goes to School in the Big City… and the Suburbs… and the Countryside… and right here in Metro Manila! College of Computer Studies, De La Salle University – Manila, Philippines. April 8, 2010.

Intelligent Tutoring Goes to School in the Big City… and the Suburbs… and the Countryside… and the Developing World Mega-City. Department of Computer Science, University of Massachusetts Amherst. February 25, 2010.

Educational Data Mining: A Revolution in Methods for Understanding Learners and Learning. Science Colloquium Series, Colgate University. November 20, 2009.

Interface design, affect, and students' choice to "game the system". BostonCHI: The New England area chapter of ACM SIGCHI. September 8, 2009.

Towards Understanding Why Students "Game the System" Within Educational Software. Institute for Intelligent Systems, University of Memphis. March 12, 2009.

Towards Understanding Why Students Game the System. Department of Educational and Counseling Psychology, McGill University. June 18, 2008.

Using Data Mining to Better Understand Learning and Learners: Key Challenges and Directions. Department of Computer Science, University of Sherbooke. June 17, 2008.

Detecting and Responding to Gaming the System in Cognitive Tutors. Carnegie Learning, Inc. April 3, 2008.

]

Towards Educational Software that Detects and Responds to All the Ways Students Choose to Use It. Department of Computer Science, Worcester Polytechnic Institute. September 14, 2007.

Detecting and Understanding Gaming the System and Off-Task Behavior in Intelligent Tutoring Systems. London Knowledge Lab, University of London. April 26, 2007.

Developing Systems that Detect and Adapt to When Students Game the System. Human-Centered Technology Group, School of Informatics, University of Sussex. November 2, 2006.

Developing Systems that Detect and Adapt to When Students Game the System. School of Informatics, University of Edinburgh. October 27, 2006.

Scooter: an Agent Who Adapts to When Students Game the System. Mixed Reality Laboratory, School of Computer Science, University of Nottingham. October 20, 2006.

Gaming the System: How it Affects Learning and Why Students Do It. Pädagogische Psychologie Group, Department of Psychology, University of Muenster. July 14, 2005.

Remediating Resilient Overgeneralization in Data Representation. Pittsburgh Supergroup for Scientific Reasoning, University of Pittsburgh. October 10, 2003.

A model of resilient overgeneralization: When you know bar graphs, all data looks categorical. UIC Cognitive Brown Bag Lecture, University of Illinois at Chicago. November 20, 2001.

ADVISING

Doctoral Advisor. Dan Yang. Ph.D. student in Centre for Complexity and Change in Learning at Adelaide University. (in process)

Doctoral Supervisory Committee Member. Vimukthini Jayalath. Ph.D. student in Centre for Complexity and Change in Learning at Adelaide University. (in process)

Doctoral Committee Member (Honorary Doctoral Advisor). Xiner "Rachel" Liu. Ph.D. student in Teaching, Learning, and Leadership at the University of Pennsylvania. (in process)

Doctoral Committee Member (Honorary Doctoral Advisor). Zhanlan Wei. Ph.D. student in Teaching, Learning, and Leadership at the University of Pennsylvania. (in process)

Doctoral Advisor. Matthew Donovan. Ed.D. student in PennCLO at University of Pennsylvania. (in process)

Doctoral Committee Member (Honorary Doctoral Advisor). Nidhi Nasiar. Ph.D. student in Learning Sciences and Technologies at the University of Pennsylvania. (2026)

Doctoral Committee Member (Honorary Doctoral Advisor). Andres Zambrano. Ph.D. student in Teaching, Learning, and Leadership at the University of Pennsylvania. (2026)

Doctoral Committee Member (Honorary Doctoral Advisor). Joyce Zhang. Ph.D. student in Learning Sciences and Technologies at the University of Pennsylvania. (2025)

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Honorary Doctoral Thesis Co-Chair. Erverson Bruno Gomes de Sousa (Primary Chair: Rafael Ferreira Mello). Computer Science Department, Universidade Federal Rural de Pernambuco, Recife, Brazil. (in process)

Doctoral Advisor. Stefan Slater. Ph.D. student in Teaching, Learning, and Leadership at the University of Pennsylvania (Graduated 2025)

Doctoral Advisor. Luis Barros. Ed.D. student in PennCLO, University of Pennsylvania. (Graduated 2023)

Doctoral Advisor. Alexandra Andres. Ed.D. student in Teaching, Learning, and Leadership at the University of Pennsylvania. (Graduated 2023)

Doctoral Advisor. Navin Valrani. Ed.D. student in PennCLO, University of Pennsylvania. (Graduated 2023)

Doctoral Advisor. Bruce Acacio. Ed.D. student in PennCLO at University of Pennsylvania. (Graduated 2022)

Doctoral Advisor. Shamya Karumbaiah. Ph.D. student in Teaching, Learning, and Leadership at the University of Pennsylvania. (Graduated 2021)

Doctoral Advisor. Miguel Andres-Bray. Ph.D. student in Teaching, Learning, and Leadership at the University of Pennsylvania. Graduated 2021. Senior Data Scientist at McGraw-Hill Education as of 2021.

Doctoral Advisor. Richard Scruggs. Ph.D. student in Higher Education at University of Pennsylvania. Graduated 2021. Postdoc at Karolinska Institute as of 2021.

Doctoral Advisor. Chad Coleman. Ph.D. student in Cognitive Studies in Education, Teachers College Columbia University. Graduated 2021. Director of Data Science at Stanley Black & Decker as of 2021.

Doctoral Advisor. Anne Trumbore. Ed.D. student in PennCLO at University of Pennsylvania. Graduated 2020. Executive Director at the University of Virginia as of 2021.

Doctoral Advisor. Nora Manz. Ed.D. student in PennCLO at University of Pennsylvania. Graduated 2020.

Doctoral Advisor. Shimin Kai. Ph.D. student in Cognitive Studies in Education at Teachers College Columbia University. Graduated 2019.

Doctoral Advisor. Michael Aaron Hawn. Ph.D. student in Cognitive Studies in Education at Teachers College Columbia University. Graduated 2018. Director of Research and Evaluation at Student Leadership Network as of 2021.

Doctoral Advisor. Victoria “Mia” Almeda. Ph.D. student in Cognitive Studies in Education at Teachers College Columbia University. Graduated 2018. Research Scientist at TERC as of 2021.

]

Doctoral Advisor. Yang Jiang (co-advisor: John Black). Ph.D. student in Cognitive Studies in Education at Teachers College Columbia University. Graduated 2018. Research Scientist at ETS as of 2021.

Doctoral Advisor. Vasiliki Georgoulas. Ph.D. student in Cognitive Studies in Education at Teachers College Columbia University. Graduated 2018.

Doctoral Advisor. Elle Wang (co-advisor: John Black). Ph.D. student in Cognitive Studies in Education at Teachers College Columbia University. Graduated 2017. Research Scientist at Arizona State University as of 2021.

Doctoral Advisor. Jeanine DeFalco. Ph.D. student in Cognitive Studies in Education at Teachers College Columbia University. Graduated 2016. Research Scientist at Army Research Laboratory as of 2021.

Doctoral Advisor. Maria "Sweet" San Pedro. Ph.D. student in Cognitive Studies in Education at Teachers College Columbia University. Graduated 2016. Senior Research Scientist at ACT as of 2021.

Doctoral Co-Advisor. Max Norris. Ph.D. student in Natural Language Processing at the University of Edinburgh. Primary advisor Kobi Gal. (in process)

Honorary Doctoral Thesis Co-Chair. David Nadler Prata (Primary Chair: Evandro Barros Costa). Computer Science Department, Universidade Federal de Campina Grande, Campina Grande, Brazil. Graduated 2008.

Post-Doctoral Mentor. Basel Hussein. Post-doctoral research associate in Learning Sciences and Technologies at University of Pennsylvania (2026-present).

Post-Doctoral Mentor. Bahar Shahrokian. Post-doctoral research associate in Learning Sciences and Technologies at University of Pennsylvania (2026-present).

Post-Doctoral Mentor. Kirk Vanacore. Post-doctoral research associate in Learning Sciences and Technologies at University of Pennsylvania (2024-2025).

Post-Doctoral Mentor. Amanda Barany. Post-doctoral research associate in Learning Sciences and Technologies at University of Pennsylvania (2023-present).

Post-Doctoral Mentor. Namrata Srivastava. Post-doctoral research associate in Learning Sciences and Technologies at University of Pennsylvania (2023-2024). Research Scientist at Vanderbilt University as of 2024.

Post-Doctoral Mentor. Valdemar Svabensky. Post-doctoral research associate in Learning Sciences and Technologies at University of Pennsylvania (2022-2023). Post-doc at Kyushu University as of 2024.

Post-Doctoral Mentor. Elizabeth Cloude. Post-doctoral research associate in Learning Sciences and Technologies at University of Pennsylvania (2022-2023). Marie Currie Fellow at Tampere University as of 2024.

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Post-Doctoral Mentor. Stephen Hutt. Post-doctoral research associate in Learning Sciences and Technologies at University of Pennsylvania (2020-2022). Assistant Professor at University of Denver as of 2024.

Post-Doctoral Mentor. Luc Paquette. Post-doctoral research associate in Human Development at Teachers College Columbia University (2013-2015). Associate Professor at University of Illinois, Urbana-Champaign as of 2024.

Post-Doctoral Mentor. Jaclyn Ocumpaugh. Post-doctoral fellow in Learning Sciences at Worcester Polytechnic Institute (2012-2013). Post-doctoral research associate in Human Development at Teachers College Columbia University (2013-2016). Senior Research Investigator at Penn Center for Learning Analytics, University of Pennsylvania (2016-present).

Post-Doctoral Mentor. Arnon Hershkovitz. Post-doctoral fellow in Learning Science at Worcester Polytechnic Institute (2011-2012; co-advisor: Janice Gobert). Post-doctoral research associate in Human Development at Teachers College Columbia University (2012-2013). Senior Lecturer at Tel Aviv University as of 2021.

Masters Advisor. Alexandra Andres. M.S. student in Learning Sciences and Technologies. Graduated 2018.

Masters Advisor. Stefan Slater. M.S. student in Learning Analytics. Graduated 2017.

Masters Advisor. Jing Zhang. M.A. student in Cognitive Studies in Education at Teachers College Columbia University. Graduated 2016.

Masters Advisor. Yunjia Yao. M.S. student in Learning Analytics at Teachers College Columbia University. Graduated 2016.

Masters Advisor. Connie Liu. M.S. student in Learning Analytics at Teachers College Columbia University. Graduated 2016.

Masters Advisor. Supreeth Gowda. (co-advisor: Neil Heffernan). M.S. student in Learning Sciences and Technologies at Worcester Polytechnic Institute. Graduated 2014.

Masters Advisor. William Hawkins. (co-advisor: Neil Heffernan). M.S. student in Computer Science at Worcester Polytechnic Institute. Graduated 2014.

Masters Advisor. Michael Wixon. (co-advisor: Janice Gobert). M.S. student in Learning Science at Worcester Polytechnic Institute. Graduated 2013.

Masters Advisor. Adam Goldstein. (co-advisor: Neil Heffernan). M.S. student in Computer Science at Worcester Polytechnic Institute. Graduated 2011.

Masters Research Supervisor. Shiyue Zheng. M.S. student in Learning Analytics. Graduated 2017.

Masters Research Supervisor. Yijun Ma. M.S. student in Communication, Computing, & Technology in Education at Teachers College Columbia University. Graduated 2016.

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Masters Research Supervisor. Victoria "Mia" Almeda. M.S. student in Neuroscience and Education. (2012- 2013)

Doctoral Thesis Committee Member. Joshua Coleman (thesis advisor: Gary Natriello). Ph.D. student in Cognitive Science in Education, Teachers College Columbia University. Graduated 2026.

Doctoral Thesis Committee Member. Alexander Scarlatos (thesis advisor: Andrew Lan). Ph.D. student in Computer Science, University of Massachusetts Amherst. Graduated 2026.

Doctoral Thesis Committee Member. Soumya M.D. (thesis advisor: Shivsubramani Krishnamoorthy). Ph.D. student in Computing, Amrita Vishwa Vidyapeetham University. Graduated 2025.

Doctoral Thesis Committee Member. Christine Nasserghodsi (thesis advisor: Felice Tilin). Ed.D. student in PENNCLO, University of Pennsylvania. Graduated 2025.

Doctoral Thesis Committee Member. Jonathon Sun. (thesis advisor: Amalia Dache). Ph.D. student in Higher Education, University of Pennsylvania. Graduated 2025.

Doctoral Thesis Committee Member. Amy Adair (thesis advisor: Janice Gobert). Ph.D. student in Learning Sciences, Rutgers University. Graduated 2024.

Doctoral Thesis Committee Member. Daneih Ismail (thesis advisor: Peter Hastings). Ph.D. student in Computer Science, DePaul University. Graduated 2023.

Doctoral Thesis Committee Member. Felipe de Morais (thesis advisor: Patricia Jaques Maillard). Ph.D. student in Applied Computing, Unisinos. Graduated 2022.

Doctoral Thesis Committee Member. Jonathan McMillan. (thesis advisor: Laura Kohn-Wood). Ph.D. student in Higher Education Leadership, University of Miami. Graduated 2022.

Doctoral Thesis Committee Member. Fatemeh Salehian Kia (thesis advisors: Marek Hatala and Lyn Bartram). Ph.D. student in School of Interactive Art and Technology, Simon Fraser University. Graduated 2021.

Doctoral Thesis Committee Member. Sungjin Nam (thesis advisor: Kevyn Collins-Thompson). Ph.D. student in School of Information, University of Michigan. Graduated 2020.

Doctoral Thesis Committee Member. Donald Huesman (thesis advisor: Laura Perna). Ed.D. student in Higher Education, University of Pennsylvania. Graduated 2019.

Doctoral Thesis Committee Member. Zhitong Yang (thesis advisor: Susan Yoon). Ph.D. student in Teaching, Learning, and Teacher Education, University of Pennsylvania. Graduated 2019.

Doctoral Thesis Committee Member. Anthony Botelho (thesis advisor: Neil Heffernan). Ph.D. student in Learning Sciences and Technologies at Worcester Polytechnic Institute. Graduated 2019.

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Doctoral Thesis Committee Member. Kim Kelly (thesis advisor: Neil Heffernan). Ph.D. student in Learning Sciences and Technologies at Worcester Polytechnic Institute. Graduated 2018.

Doctoral Thesis Committee Member. Toi Sin Arvidsson (thesis advisor: Deanna Kuhn). Ph.D. student in Cognitive Studies at Teachers College Columbia University. Graduated 2018.

Doctoral Thesis Committee Member. Korinn Ostrow (thesis advisor: Neil Heffernan). Ph.D. student in Learning Sciences and Technologies, Worcester Polytechnic Institute. Graduated 2018.

Doctoral Thesis Committee Member. Seth Adjei (thesis advisor: Neil Heffernan). Ph.D. student in Computer Science at Worcester Polytechnic Institute. Graduated 2018.

Doctoral Thesis Committee Member. Alison Lee (thesis advisor: John Black). Ph.D. student in Cognitive Studies at Teachers College Columbia University. Graduated 2018.

Doctoral Thesis Committee Member. Douglas DiStefano (thesis advisor: Molly Ness). Ph.D. student at Fordham University. Graduated 2018.

Doctoral Thesis Committee Member. David Nitkin (thesis advisor: Douglas Ready). Ph.D. student in Educational Leadership at Teachers College Columbia University. Graduated 2018.

Doctoral Thesis Committee Member. Tiantian Jin (thesis advisor: John Black). Ph.D. student in Cognitive Studies at Teachers College Columbia University. Graduated 2018.

Doctoral Thesis Committee Member. Raha Moussavi (thesis advisor: Janice Gobert). Ph.D. student in Learning Sciences and Technologies at Worcester Polytechnic Institute. Graduated 2018.

Doctoral Thesis Committee Member. Naomi Wixon (thesis advisor: Ivon Arroyo). Ph.D. student in Learning Sciences and Technologies at Worcester Polytechnic Institute. Graduated 2018.

Doctoral Thesis Committee Member. Michelle Banawan (thesis chair: Mercedes Rodrigo) Ph.D. student in Computer Science at Ateneo de Manila University. Graduated 2017.

Doctoral Thesis Committee Member. Ama Awotwi (thesis advisor: Herb Ginsburg). Ph.D. student in Cognitive Studies at Teachers College Columbia University. Graduated 2017.

Doctoral Thesis Committee Member. Joanne Duncan-Carnesciali (thesis advisor: Robert Fullilove). Ph.D. student in Health Education at Teachers College Columbia University. Graduated 2016.

Doctoral Thesis Committee Member. Michael Swart (thesis advisor: John Black). Ph.D. student in Cognitive Studies at Teachers College Columbia University. Graduated 2016.

Doctoral Thesis Committee Member. Kelly Feeney (thesis advisor: O. Roger Anderson). Ph.D. student in Science Education at Teachers College Columbia University. Graduated 2016.

Doctoral Thesis Committee Member. Nicole DiCrecchio (thesis advisor: James Corter). Ph.D. student in Measurement and Evaluation at Teachers College Columbia University. Graduated 2016.

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Doctoral Thesis Committee Member. Diego Luna-Bazaluda (thesis advisor: Larry DeCarlo). Ph.D. student in Measurement, Evaluation, and Statistics, at Teachers College Columbia University. Graduated 2015.

Doctoral Thesis Committee Member. Yung-Yi Juliet Chao (thesis advisor: Barbara Tversky). Ph.D. student in Cognitive Studies at Teachers College Columbia University. Graduated 2015.

Doctoral Thesis Committee Member. Jung Yeon Park (thesis advisor: Matthew Johnson). Ph.D. student in Measurement, Evaluation, and Statistics, at Teachers College Columbia University. Graduated 2015.

Doctoral Thesis Committee Member. YuTao Wang (thesis advisor: Neil Heffernan). Ph.D. student in Computer Science at Worcester Polytechnic Institute. Graduated 2015.

Doctoral Thesis Committee Member. Karrie Godwin (thesis advisor: Anna Fisher). Ph.D. student in Psychology at Carnegie Mellon University. Graduated 2015.

Doctoral Thesis Committee Member. Ani Aghababyan (thesis advisor: Taylor Martin). Ph.D. student in Instructional Systems and Learning Sciences at Utah State University. Graduated 2014.

Doctoral Thesis Reader. Charles Lang (thesis advisor: Howard Gardener). Ph.D. student in Human Development and Education at Harvard University. Graduated 2014.

Doctoral Thesis Committee Member. Samantha Creighan (thesis advisor: Herbert Ginsburg). Ph.D. student in Cognitive Studies in Education at Teachers College Columbia University. Graduated 2014.

Doctoral Thesis Committee Member. Elizabeth Owen (thesis advisor: Constance Steinkuehler). Ph.D. student in Games, Learning, and Society at University of Wisconsin, Madison. Graduated 2014.

Doctoral Thesis Committee Member. Michael Sao Pedro (thesis advisor: Janice Gobert). Ph.D. student in Learning Sciences and Technologies at Worcester Polytechnic Institute. Graduated 2013.

Doctoral Thesis Committee Chair (Honorary). Dan Hoffman (thesis advisor: Chuck Kinzer). Ph.D. student in Communication, Computing, & Technology in Education. at Teachers College Columbia University. Graduated 2013.

Doctoral Thesis Committee Member. Kara Carpenter (thesis advisor: Herbert Ginsburg). Ph.D. student in Cognitive Studies in Education at Teachers College Columbia University. Graduated 2013.

Doctoral Thesis Committee Member. Zachary Pardos (thesis advisor: Neil Heffernan). Ph.D. student in Computer Science at Worcester Polytechnic Institute. Graduated 2012. Assistant Professor at the University of California, Berkeley as of 2013.

Doctoral Thesis Committee Member. Wendy Moore (thesis advisor: Deanna Kuhn). Ph.D. student in Cognitive Studies in Education at Teachers College Columbia University. Graduated 2012.

]

Masters Thesis Committee Member. Marcelo Almeida Santana (thesis chair: Evandros Barros Costa) M.S. student in Computer Science at the Universidade Federal de Alagoas. Graduated 2015.

Masters Thesis Committee Member. Juan Miguel Limjap Andres (thesis chair: Mercedes Rodrigo) M.S. student in Computer Science at Ateneo de Manila University. Graduated 2014.

Masters Thesis Committee Member. Jose Carlos Soriano (thesis chair: Mercedes Rodrigo) M.S. student in Computer Science at Ateneo de Manila University. Graduated 2012.

Masters Thesis Committee Member. Diane Lee (thesis chair: Mercedes Rodrigo) M.S. student in Computer Science at Ateneo de Manila University. Graduated 2011.

Masters Thesis Committee Member. Maria O.C.Z. San Pedro (thesis chair: Mercedes Rodrigo) M.S. student in Computer Science at Ateneo de Manila University. Graduated 2010.

Masters Thesis Committee Member. Karina Hizon (thesis chair: Mercedes Rodrigo) M.S. student in Computer Science at Ateneo de Manila University. Graduated 2009.

International Doctoral Dissertation Reviewer. Sergio Salmeron. (thesis chairs: Olga Santos and Jesus Boticario). Ph.D. student in Artificial Intelligence at Universidad Nacional de Educación a Distancia (UNED). Graduated 2018.

Masters Capstone Advisor, Learning Analytics and AI (UPenn). Tanuj Garg (2025), John Baker (2025).

Undergraduate Major Qualifying Project (WPI). Kristin Hughes (2010)

Undergraduate Interactive Qualifying Project (WPI). Zhongxiu Liu & Visit Patara (2012-2013), Alan Alezker (2012-2013), Anthony Rojas & Daniel Roberge (2011), Gregory Moore (2011), Breanna McElroy & Mohammad Alshuqaiq (2011), Ryan Genato & Samantha Fontaine & Ricardo Belmontez (2011), Ethan Wolfe & James Salvati (2010-2011), Sean Burke & Michael Ducey & Sindi Silaj (2010)

Independent Study Projects (WPI). Michael Tidd (2011), Adam Nakama (2010), Dovan Rai (2010)

Masters Research Internships (UPenn 2018-2024): Yan Tao, Alexander White, Zuchuan Liao, Jialian Li, Nidhi Nasiar, Wanjing "Anya" Ma, Yiqiu Zhou, Weiyi Gong, Yishan Zou, Xiaodan Yu, Seiyon Lee, Haripriya Valayaputtar, Xiner "Rachel" Liu, Zhongtian Huang, Zeyneb Sarioglan, Qimu "Martin" Liang, Margaret Guan, Erin Chi, Haoxuan Cui

Undergraduate Research Assistantships, Summer Internships, Summer Research Fellowships (UPenn, 2016-2024): Aayushi Dangol, Ana Lamberto, Benjamin Blanco, Alex Tang, Clayton Hickey

Undergraduate Senior Design Mentor (UPenn, 2016-2025): Derin Gunzel, Rodolfo Manuel Villarica, Saurabh Vasil, Dylan Levine, Paras Nahar, Joe Schwabacher, Lorenzo Lucina Maguire, Joshua Valluru, Sean Cho, James Baker, Cindy Wei, Vivi Li, Chanya Thanglerdsumpan, Avinash Upadhyayula

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Undergraduate Research Assistantships, Summer Internships, Summer Research Fellowships (WPI, 2009-2013): Kevin Ramirez, Gregory Moore, Ravi Raval, Milan Desai, Robert Le, Meng Sun, Andrew Tremblay

Undergraduate Research Assistantships, Summer Internships, Summer Research Fellowships (CMU, 2006-2008): Owen Durni, Matthew Morrill, Brian Thompson

External Examiner. Amrita Vishwa Vidyapeetham (Ph.D. student in Engineering at Amrita University), 2025. Vinitra Swamy (Ph.D. student in Computer Science at EPFL), 2025. Stephanie Buono (Ph.D. student in Applied Psychology and Human Development at the Ontario Institute for Studies in Education, University of Toronto), 2021. Tapani Toivonen (Ph.D. student in Computer Science at University of Eastern Finland), 2020. Ng Hongrui Kelvin (Ph.D. student in Electrical and Electronic Engineering, Nanyang Technological University), 2020. Jan Papousek (Ph.D. student in Computer Science at Masaryk University), 2018. Ilkka Jormanainen (Ph.D. student in Computer Science at University of Eastern Finland), 2013. Luc Paquette (Ph.D. student in Computer Science at Sherbrooke University), 2013. Elys Vasquez-Iscan (Ph.D. student at Teachers College), 2013. Benjapol Benjapalakorn (Ph.D. student at Teachers College), 2013. Lichao Li (M.S. student in Information Technologies at University of Sydney). 2007.

OTHER TEACHING EXPERIENCE

Tutorial. Ocumpaugh, J., Paquette, L., Barany, A., Baker, R.S. (2025) Conducting in-the-moment data-driven classroom interviews (DDCI) during digital learning using Quick Red Fox (QRF). International Conference on Artificial Intelligence and Education. July 22, 2025.

Co-Director (2024-2025) LASER Institute.

Co-Director (2024-2025) Data Science Methods for Digital Learning Platforms IES Certificate.

Faculty Facilitator. Baker, R.S. (2023-2024). Introduction to Teaching with Artificial Intelligence, Penn Professional Learning,

Tutorial. Baker, R.S. (2021) Educational Data Mining. FREMO, Center for Educational Measurement, University of Oslo. August 23, 2021.

Tutorial. Baker, R.S. (2018) Feature Engineering. Bi-Annual Meeting of the Big Data for Education Spoke of the Northeast Big Data Hub. October 18, 2018.

Tutorial. Baker, R.S. (2018) Feature Engineering. Learning Analytics Summer Institute. June 11, 2018.

Tutorial. Baker, R.S. (2018) Feature Engineering. Teaching Systems Laboratory, Massachusetts Institute of Technology. May 18, 2018.

Tutorial. Baker, R.S., Nurnberger, A. (2018) Educational Data Mining Methods. Bi-Annual Meeting of the Big Data for Education Spoke of the Northeast Big Data Hub. February 16, 2018.

Tutorial. Baker, R.S. (2017) Educational Data Mining/Learning Analytics. National Center for Education Statistics. October 3, 2017.

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Tutorial. Baker, R.S., Arroyo, I. (2017) Educational Data Mining. Annual Meeting of the Northeast Big Data Hub, Big Data for Education Spoke. August 28, 2017.

Tutorial. Baker, R.S. (2017) Data Mining and Big Data. French-American Chamber of Commerce. May 13, 2017.

Webinar. Siemens, G., Baker, R.S.J.d. (2013) State of the Field: Learning Analytics and Educational Data Mining. EDUCAUSE Learning Initiative. August 5, 2013.

Workshop. DiCerbo, K., Baker, R.S.J.d. (2013) Serious Gaming Analytics. Workshop presentation at the 2013 Learning Analytics Summer Institute. Stanford, California.

Tutorial. Costa, E.G., Baker, R.S.J.d., Amorim, L., Magalhaes, J., Marinho, T. (2012) Mineração de Dados Educacionais: Conceitos, Técnicas, Ferramentas e Aplicações. Jornada de Atualização de Informática em Educação 2012. Rio de Janeiro, Brazil.

Instructor. Pittsburgh Science of Learning Center Summer School. Summer 2012.

Tutorial. Nixon, T., Baker, R.S.J.d., Yudelson, M. & Pardos, Z. (2012). Parameter fitting for learner models. Workshop at the International Conference on Intelligent Tutoring Systems. Corfu, Greece.

Tutorial. Graesser, A., Baker, R.S.J.d., Beck, J.E. (2011) A Workshop on Adaptive Learning Systems: A Pre-Conference Workshop of the Philippine Computing Science Congress 2011. Naga, Bicol, Philippines.

Tutorial. Baker, R.S.J.d., Rodrigo, M.M.T. (2010) Toward the adaptive classroom: Emerging educational data mining methods for scientific discovery in education. Workshop in Philippines for Engineering Research and Development for Technology Consortium. Held at Ateneo de Manila University.

Instructor. Pittsburgh Science of Learning Center Summer School. Head, Educational Data Mining track. Summer 2010.

Tutorial. Baker, R.S.J.d., Yacef, K., Beck, J.E., Koedinger, K.R. (2009) Educational Data Mining. Tutorial at Artificial Intelligence in Education 2009.

Instructor. Pittsburgh Science of Learning Center Summer School. Co-head, Educational Data Mining track (with Kenneth R. Koedinger). Summer 2009.

Instructor. Pittsburgh Science of Learning Center Summer School. Co-head, Data Mining with DataShop track (with Kenneth R. Koedinger). Summer 2008.

Teaching Assistant. Cognitive Modeling and Intelligent Tutoring Systems, Professor Kenneth R. Koedinger. Human-Computer Interaction Institute, Carnegie Mellon University. Spring 2001.

Teaching Assistant. Advanced Algorithms, Professor Franco Preparata. Department of Computer Science, Brown University. Fall 1999.

Head Teaching Assistant. Data Structures and Algorithms, Professor Roberto Tamassia. Department of Computer Science, Brown University. Spring 1999.

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Teaching Assistant. Data Structures and Algorithms, Professor Roberto Tamassia. Department of Computer Science, Brown University. Spring 1998.

Teaching Assistant. Intensive Algebra II Course. Intensive Mathematics Institute, Denton, TX. Summer 1996.

ADVISORY BOARDS

Centre for Educational Technology and Learning Sciences (CETLS) at IIIT Hyderabad. 2026-present.

Center for Learning Analytics at Monash. 2023-present.

Bias, Fairness, and Equity Advisory Board. Macmillan. 2023-2024.

Global Connections for Women (GC4W). 2021-unknown.

Digital Vocational Education and Training Hub. Swiss Federal Institute of Technology – Lausanne. 2021-present.

Arizona State University EdPlus Action Lab. 2019-2022.

The EdTech Genome Project. 2019-2021.

Academic Development Institute. 2018-2019.

Alef Education. 2017-2025.

McGraw-Hill Education Learning Sciences Research Council Advisory Board/ Learning Science Research Advisory Board. 2017-2021.

Army Research Laboratory. UM-ARL Advisory Board. 2018, 2016.

Central China Normal University. Academic Advisory Committee, School of Psychology and Key-lab and center. 2015.

Classba. Advisory Board. 2015-2016.

University of California, Irvine. Investigating Virtual Learning Environments. Advisory Board Member. For M. Warschauer (PI), 2015-2020.

University of Nevada, Las Vegas. Learning Theory and Analytics as Guides to Improve Undergraduate STEM Education, Advisory Board Member. For M. Bernacki (Project Lead). 2015-2018.

Purdue University. Assessing and Improving Online Learning Spaces for At-Risk Engineering Students. Advisory Board Member. For J. DeBoer (Project Lead). 2015-2018.

NAEP Survey Assessment Innovations Laboratory Network. Advisory Board Member, 2014.

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GameDesk, Inc. EXP: Learning Lens: An Evidence-Centered Tool for 21st Century Assessment. Advisory Board Member. 2013-2015.

Everest Edusys/QED, Centre for the Science of Learning (CSL). Scientific Learning Advisor. 2013-2014.

Concord Consortium. Collaborative Research: Large-Scale Research on Engineering Design Based on Big Learner Data Logged by a CAD Tool. Advisory Board Member. 2013-2015.

SRI, International. BCC-EHR: Developing Community Capacity to Measure Noncognitive Factors in Digital Learning Environments. Steering Committee Member. 2013-2015.

Teachley. Board of Advisors. 2013-2014.

Massachusetts Institute of Technology. Dynamic Formative Assessment Models Project Advisory Board. 2012-2013.

Army Research Laboratory. ARL-IIS Advisory Board. 2012-2013.

Stanford University. Learning Analytics Project Affinity Group. 2012-2013.

SRI International. Educational Data Mining Technical Working Group, led by Marie Bienkowski, 2011.

University of Colorado, Boulder. NSF Inquiry Hub project, led by Tamara Sumner, William Penuel. 2011-2014.

Carnegie Learning, Inc. Math360/Math Series Advisory Board. 2009-2011.

ACADEMIC SERVICE AT DEPARTMENT AND UNIVERSITY LEVEL

Artificial Intelligence Taskforce Workstream Lead. Adelaide University, 2026.

Chair, Committee on Degrees. University of Pennsylvania Graduate School of Education, 2024-2025.

Chair, Senate Committee on Faculty and the Administration (SCOA). University of Pennsylvania, 2022-2024.

Doctoral Programs Committee. Learning, Teaching, and Literacies. University of Pennsylvania Graduate School of Education.

PhD Summer Funding Committee. University of Pennsylvania Graduate School of Education. 2020-present.

Promotion/Tenure Committees. University of Pennsylvania Graduate School of Education. 2023-present.

Hiring Search Committees. University of Pennsylvania Graduate School of Education. 2020-present.

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Committee on Degrees. University of Pennsylvania Graduate School of Education. 2018-present.

Senate Committee on Faculty and the Administration (SCOA). University of Pennsylvania. 2018-2024.

Subject Matter Expert. University of Pennsylvania. Penn Information Systems & Computing. Data/AI Team. Penn IT Strategic Plan Committee. 2023.

Advisory Board. Penn GSE Center for Innovation/Catalyst. 2017-present.

Faculty Advisory Committee, Center for Excellence in Teaching, Learning, and Innovation, University of Pennsylvania. 2023-present.

Steering Committee. PennCLO Executive Doctoral Program. 2017-2025.

Faculty Advisory Committee, Online Learning Initiative, University of Pennsylvania. 2016-2023.

Doctoral Programs Committee Chair. Teaching, Learning, and Leadership. University of Pennsylvania Graduate School of Education. 2019-2022.

Learning Management System Working Group. Teachers College, Columbia University. 2015.

Vice Provost for Digital Learning Search Committee. Teachers College, Columbia University. 2014-2015.

Faculty Salary Committee. Teachers College, Columbia University. 2014-2015.

Learning Sciences Committee. Teachers College, Columbia University. 2013-2015.

CIO Search Committee. Teachers College, Columbia University. 2013-2014.

Information Security Committee. Teachers College, Columbia University. 2013-2015.

Dean's Grants for Students Committee. Teachers College, Columbia University. 2013-2016.

Institutional Review Board. Teachers College, Columbia University. 2013-2016.

Summer Institutional Review Board. Teachers College, Columbia University. 2014.

Seminar Organizer. Learning Analytics Seminar. Teachers College, Columbia University. 2012-2015.

Learning Outcomes Coordinator. Department of Social Science and Policy Studies, Worcester Polytechnic Institute, 2010-2012.

Graduate Committee. Department of Social Science and Policy Studies, Worcester Polytechnic Institute, 2009-2012.

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Faculty Review Committee. Worcester Polytechnic Institute, 2010-2011.

Seminar Co-Organizer. (with Sandra Katz) Pittsburgh Science of Learning Center. Carnegie Mellon University/ University of Pittsburgh. 2008.

Seminar Co-Organizer. Research and Publication Reading Group. Learning Sciences Research Institute. University of Nottingham. 2006-2007.

Seminar Organizer. Human-Computer Interaction Institute PhD lunches. 2002-2004.

ACADEMIC SERVICE TO THE BROADER RESEARCH COMMUNITY

Editor. Founding Editor (with Didith Rodrigo) *Computer-Based Learning in Context.* 2018-2023.

President. Founding President. *International Educational Data Mining Society*. 2011-2015.

Associate Editor. *Journal of Educational Data Mining*. 2008-Present.

Associate Editor. *Computer-Based Learning in Context.* 2024.

Associate Editor. *International Journal of Artificial Intelligence and Education*. 2015-2018.

Spoke Co-Lead. Big Data in Education Spoke of the NSF Northeast Big Data Innovation Hub. 2015-2020.

Network Co-Lead. Learning Analytics Learning Network. 2019-2025.

Festival of Learning Chair. *Festival of Learning 2027: International Conference on Artificial Intelligence and Education, International Conference on Educational Data Mining, ACM Learning @ Scale.* Adelaide, SA Australia. 2027.

Conference Chair. *Sixth International Conference on Quantitative Ethnography.* Philadelphia, PA. 2024.

Conference Chair. *Third International Conference on Educational Data Mining.* Pittsburgh, PA, USA. June 11-13 2010.

Program Chair, *18th International Conference on Artificial Intelligence in Education,* 2017.

Program Chair (with Dragan Gasevic and Elle Wang). *Second Learning with MOOCs Workshop.* 2015.

Program Chair (with Joseph E. Beck). *First International Conference on Educational Data Mining*, Montreal, Canada, June 20-21, 2008.

]

Program Chair (with May Talandron and Sebastian Lalle). *International Conference on Computers in Education, C1 -- Artificial Intelligence in Education/Intelligent Tutoring System Sub-Conference.* 2023.

Program Committee Co-Chair. *International Conference on Computers in Education, C1 -- Artificial Intelligence in Education/Intelligent Tutoring System Sub-Conference.* 2022.

Workshop Co-Organizer. Third Workshop on Generative AI and Learning Analytics (GenAI-LA 2026). LAK2026.

Workshop Co-Chair. From Data to Discovery: LLMs for Qualitative Analysis in Education. LAK2025.

Workshop Co-Organizer. Applications of Generative AI to Support Teaching and Learning in Higher Education. AIED2025.

Workshop Co-Organizer. Conducting in-the-moment Data-Driven Classroom Interviews (DDCI) during digital learning using Quick Red Fox (QRF). ISLS2025.

Workshop Co-Organizer. Generative AI and Learning Analytics (GenAI-LA): Evidence of Impacts on Human Learning. LAK2025.

Workshop Co-Organizer. Learning to Teach with (and Learn from!) the LASER Institute Curriculum. LAK2024.

Workshop Co-Chair. Workshop for Undergraduates in Educational Data Mining and Learning Engineering. EDM2021.

Workshop Co-Organizer. Building Capacity Through the Learning Analytics Learning Network. LA2020.

Workshop Co-Chair. Scientific Findings from the ASSISTments Longitudinal Data Challenge. EDM2018.

Workshop Co-Chair. replicate.education: A Workshop on Large Scale Education Replication. EDM2018.

Workshop Co-convener. Sims and Games Learning Analytics and Educational Data Mining Workshop. New York University, 2013.

Workshop Co-Chair. Formative Feedback in Interactive Learning Environments. AIED 2013.

Workshop Co-Chair. Workshop on Data Mining for User Modeling. *11th International Conference on User Modeling*. 2007.

Workshop Co-Chair. Workshop on Educational Data Mining. *8th International Conference on Intelligent Tutoring Systems*. 2006.

Board of Directors. International Educational Data Mining Society. 2012-2024.

Board of Directors. *Academic Development Institute.* 2016-2019.

]

Executive Committee. *The Learning Ideas Conference.* 2020-present.

Scientific Committee. *XXV Congreso Internacional de Tecnologías para la Educación y el Conocimiento – InterESTRATIC.* 2025.

Juror. McGraw Prize. 2018, 2020-2025.

Program Board. Adaptive Instructional Systems Conference. 2018-unknown.

Steering Committee. International Conference on Educational Data Mining (EDM) series/ International Educational Data Mining Society. 2006-2011.

Executive Committee. International Artificial Intelligence in Education Society. 2011-2023.

Steering Committee. Learning Analytics and Knowledge Conference / Society for Learning Analytics Research, 2011-unknown.

Steering Committee. ACM Learning @ Scale, 2014-2017.

Conference Advisory Board. Educational Data Mining. 2023.

Scholarships Co-Chair. Educational Data Mining. 2023-2025.

Panel & Keynotes Chair. Artificial Intelligence and Education. 2025.

Editorial Board. Empathic Computing. 2026-present.

Editorial Board. Journal of Quantitative Ethnography. 2026-present.

Editorial Board. Journal of Learning Analytics. 2024-present.

Editorial Board. Review of Educational Research. 2023-2024.

Editorial Board. Computers & Education: Artificial Intelligence. 2022-present.

Editorial Board. Journal of the Learning Sciences. 2018-present.

Editorial Board. User Modeling and User-Adapted Interaction. 2019-present.

Editorial Board. International Journal of Artificial Intelligence in Education. 2013-2021.

Editorial Board. International Journal of STEM Education. 2014-present.

Editorial Board. Technology, Knowledge, and Learning. 2013-2014.

Editorial Board. Journal of Writing Analytics. 2016-2019.

Editorial Board. Learning Letters. 2023-present.

Institute Lead. Learning Analytics Summer Institute. Stanford, California. 2013.

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Special Section Editor. Journal of Educational Data Mining. Special Section on Human-AI Partnership Enhancing Qualitative Data Analysis for Educational Data Mining. With Amanda Barany and Ha Nguyen. 2026.

Special Issue Editor. Journal of Learning Analytics. Special Issue on Advancing 21st-Century Professional Competencies with Learning Analytics in the Age of Generative AI. With Abhinava Barthakur, Olga Viborg, Rene Kizilcec, Shane Dawson. 2026.

Special Issue Editor. Journal of Educational Data Mining. Special Issue of Educational Data Mining on Motivation, Meta-cognition, and Self-regulated Learning. With Phil Winne. 2013.

Special Issue Editorial Board. Technology, Mind, and Brain. Special Issue on Understanding Involuntary Thought and Affect through Big Data and AI.

Board of Special Reviewers. User Modeling and User-Adapted Interaction. 2010-2019.

Representative. Representative to the Board of the International Alliance to Advance Learning in the Digital Era. 2017-2020.

BlueSky Track Chair. International Conference on Artificial Intelligence and Education, 2024.

Doctoral Consortium Co-Chair. International Conference on Quantitative Ethnography, 2022.

Advisory Committee. AI-Based Adaptive Education Conference. 2018-2020.

Advisor. Northeast Student Data Corps, Philadelphia Chapter. 2021.

Advisory Board. National Comprehensive Center. 2024.

Scientific Advisor. OECD, for book "OECD DIGITAL EDUCATION OUTLOOK 2021 Pushing the frontiers with AI, blockchain, and robots". 2020-2021.

Program Committee.

Frontiers in Education (2026)
International Computing Education Research (2023-2024, 2026)
Computer-Supported Collaborative Learning (2023)
Learning Ideas (2023)
Educational Advances in Artificial Intelligence (2022)
Association for the Advancement of Artificial Intelligence – AAAI (area chair, 2021)
Quantitative Ethnography (2026 – senior PC, 2021, 2020)
IEEE International Conference on Engineering, Technology, and Education (2018)
Learning Sciences/ICLS/ISLS (2018, 2022-2025 – senior PC)
Learning with MOOCs Workshop (2016-2019, 2014)
User Modeling, Adaption, and Personalization (2009-2025)
IEEE International Conference on Advanced Learning Technologies (2017), AISLE Track (2021-2022)
Affective Computing and Intelligent Interaction (2023, 2019, 2017 – senior PC, 2024 - PC, 2013 – area chair, 2011)

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Learning Analytics (2011-2019, 2020-2027 senior PC)
aWEAR (2016)
ACM Learning at Scale (2019-2026, 2015, 2014)
FLAIRS (2014-2017)
Educational Data Mining (2009-2016, 2023 -- PC, 2017-2019, 2021-2022, 2024-2026 – senior PC)
Artificial Intelligence and Education (2021-2026, 2019, 2018, 2015, 2013, 2011 – senior PC, 2020, 2009- PC) (Named one of Best Reviewers in 2013)
ACM Symposium on Applied Computing Track on Intelligent, Interactive, and Innovative Learning Environments (2016, 2014, 2011)
Intelligent Tutoring Systems (2018, 2016 – senior PC, 2014, 2012, 2010 – senior PC, 2008) (Named Outstanding Reviewer in 2010)
Flairs Special Track on Intelligent Tutoring Systems (2008-2015)
Foundations of Digital Games (2014 – senior PC)
Digital Game and Intelligent Toy Enhanced Learning (2012, 2010, 2009, 2007)
Interactive Virtual Agents (2012)
Intelligent User Interfaces (2011)
International Joint Conference on Artificial Intelligence (2011)
Flairs Special Track on Affective Computing (2011)
ICCE Conference on AIED/ITS & Adaptive Learning (ICCE) (2024-2026, 2016-2021, 2008-2010)
User Modeling (2007)
AIED Blue Sky Track (2025)
Big Data in Education and Learning Analytics, BDELA (Track 7 – 2017)
EC-TEL Doctoral Consortium (2023)
The Workshop on Human-Centric Explainable AI in Education (HEXED) (2024, 2025)
AAAI symposium on Educational Advances in Artificial Intelligence, Special track on AI for Education (2024)
Workshop on Participatory Co-Design of Platform-Embedded Learning Experiments, LAK (2023)
Workshop on A/B Testing at Scale, ACM Learning@Scale (2023)
International Workshop on Metaverse and Artificial Companions in Education and Society (2022, 2021)
Emerging Technologies for Teachers Professional Development at Scale Workshop, ICCE (2019)
EDM'19 Workshop on EDM & Games: Leveling Up Engaged Learning with Data-Rich Analytics (2019)
Workshop on Measuring, Analyzing, and Modeling Multimodal Multichannel Data for Supporting Self-Regulated Learning by Making Systems More Intelligent for All in the 21st Century (2019)
IEEE CIG-2018 Special Session on Intelligent Games for Learning (2018)
International Workshop on Data-Driven Educational Game Design, CHI (2018)
Workshop on Online Learning Non-Cognitive Assessments at Scale,

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LAK (2018)
International Workshop on Context Based Affect Recognition, ACII (2017)
Integrated Analytics: MOOC Post-Course Development Workshop, LAK (2017)
MOOC Post-Course Development Workshop, LAK2017 (2017)
International Workshop on Teaching Analytics (2016)
Supporting Dynamic Cognitive, Affective, and Metacognitive Processes Workshop, ITS (2016)
Workshop on Applied and Practical Learning Analytics, EC-TEL (2016)
International Workshop on Affect, Meta-Affect, Data and Learning (2015)
Workshop on Equity, Diversity, and Inclusion in Educational Technology Research and Development, AIED (2023)
Workshop on Integrated Learning Analytics of MOOC Post-Course Development (2017)
Workshop on Graph-based Educational Data Mining (2015)
Workshop on Applied and Practical Learning Analytics (2015)
Workshop on Culturally-Aware Tutoring Systems (2015, 2014, 2013)
Workshop on Non-Cognitive Factors and Personalization for Adaptive Learning (2014)
Workshop on Social, Motivational and Affective Dimensions of Learning through Social Interaction (2014)
Workshop on Knowledge Discovery in MOOCs (2014)
Workshop on Modeling Large Scale Social Interaction in Massively Open Online Courses, EMNLP (2014)
Workshop on Cross-cultural Differences and Learning Technologies for the Developing World (LT4D), AIED (2013)
moocshop, AIED (2013)
Towards Theory and Practice of Teaching Analytics Workshop, EC-TEL (2012)
Workshop on Intelligent Support for Learning in Groups (2014, 2012)
Workshop on Self-Regulated Learning in Educational Technologies, AIED (2013), ITS (2012)
Workshop on Sentiment Discovery from Affective Data, ECML/PKDD (2012)
Workshop on Knowledge Discovery in Educational Data (2011)
International Workshop on Empathic Computing (2015, 2011)
International Workshop on Intelligent Support in Exploratory Environments, ECTEL (2010, 2008), AIED (2009), ICLS (2010)
Workshop on Closing the Affective Loop in Intelligent Learning Environments, AIED (2009)
Workshop on Emotional and Cognitive Issues in ITS, ITS (2008)
International Workshop on Metacognition and Self-Regulated Learning in ITS, ITS (2008)
Workshop on Education Informatics, ECAI (2008)
Workshop on Educational Data Mining, ICALT (2007)
Workshop on Educational Data Mining, AIED (2007)
International Workshop on Applying Data Mining in e-Learning, EC-TEL (2007)

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Workshop on Metacognition and Self-Regulated Learning in Intelligent Tutoring Systems, AIED (2007)

Other Conference Reviewing.

IEEE Frontiers in Education (2026)
Big Data in Education (2024)
Affective Computing and Intelligent Interaction (2024, 2023)
International Computing Education Research (2023)
Quantitative Ethnography (2022)
ACM Learning @ Scale (2021, 2018)
APS Mind, Technology, Society (2018)
Cognitive Science Society (2022-2026, 2017, 2014, 2012, 2011, 2007, 2005, 2003)
Learning Sciences (2023, 2016, 2014, 2022 – senior reviewer, 2010)
Computer-Human Interaction (2018, 2014, 2012, 2009, 2008, 2007)
American Educational Research Association (2012, 2010, 2009, 2003)
Intelligent Tutoring Systems (2008, 2006, 2002)
Computers in Education (2020, 2008, 2006)
Artificial Intelligence in Education (2007, 2005, 2003)
Intelligent User Interfaces (2008)
User Modeling (2007, 2003)
User Interface Software and Technology (2007)
Digital Game and Intelligent Toy Enhanced Learning (2007)
Cognitive Modeling (2004)
European Cognitive Science Society (2003)
Learning Sciences Conference (2002)
Workshop on Social and Emotional Intelligence in Learning Environments, ITS (2004)

Other Journal Reviewing.

Radiologic Technology (2026)
International Journal of Qualitative Methods (2026)
Social Science Computer Review (2026)
Computers and Human Behavior Reports (2026)
Quality & Quantity (2026)
Educational Psychologist (2026)
Information, Communication, and Society (2025)
Data Mining and Knowledge Discovery (2025)
Nature Human Behaviour (2025)
Cognitive Science (2025)
Social Innovation Journal (2025)
npj Science of Learning (2024)
ACM Computing Surveys (2024)
Journal of Computing in Higher Education (2024)
Education Policy Analysis Archives (2024)
Expert Systems with Applications (2024)
Research and Practice in Technology-Enhanced Learning (2022023)
Educational Psychology Review (2023-2025)
Educational Assessment (2023)
Technology, Mind, and Brain (2023)
Current Directions in Psychological Science (2023)

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Asia Pacific Education Review (2023)
IEEE Transactions on Education (2023, 2022)
Open Education Studies (2022)
IEEE Pervasive Computing (2022)
Computers and Education: Artificial Intelligence (2022)
Journal of Computers in Education (2021)
Technology, Knowledge, and Learning (2023, 2022, 2021)
Applied Intelligence (2021)
AI and Society: Knowledge, Culture, & Communication (2022, 2021)
Journal of Educational Psychology (2023, 2021)
Behavior Research Methods (2022, 2021)
Interactive Learning Environments (2022, 2021)
American Educational Research Journal (2021)
Future Generation Computer Systems (2021)
Computers and Human Behavior (2021, 2013)
Psychological Science (2020)
AERA Open (2020)
Journal of Research on Educational Effectiveness (2020, 2019)
Education Policy Analysis Archives (2020)
Gulf Education and Social Policy Review (2020)
Knowledge and Information Systems (2020)
Higher Education Quarterly (2019)
Educational Technology Research & Development (2022-2024, 2020, 2019)
Review of Educational Research (2019)
Computers & Education (2026, 2025, 2023, 2022, 2019, 2014)
Journal of Educational Measurement (2024, 2018)
IEEE Transactions on Learning Technologies (2023, 2022, 2018)
Behaviormetrika (2018)
Journal of Computer Assisted Learning (2024-2025 2022, 2018, 2017, 2011, 2008, 2007)
New Review of Hypermedia and Multimedia (2018)
ACM Transactions on Computing Education (2017)
British Journal of Educational Technology (2024, 2022, 2021, 2020, 2019, 2017)
IEEE Transactions on Affective Computing (2018, 2017)
Quality Assurance in Education (2017)
Learning and Instruction (2018, 2017)
Journal of Learning Analytics (2026, 2024, 2023, 2018, 2017)
The Internet and Higher Education (2022, 2015)
Research in Higher Education (2016, 2015)
Educational Researcher (2020, 2015)
International Journal of Human-Computer Interaction (2026, 2015)
International Journal of Learning Technologies (2015)
International Review of Research in Open and Distributed Learning (2023, 2018-2021, 2014)
International Journal of Human-Computer Studies (2014, 2012, 2011)
Philippines Journal of Science (2014)
Cognitive Development (2013)
Journal of the Learning Sciences (2022, 2015, 2013, 2012, 2009)
International Journal of Design (2013)

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International Journal of Learning Technology (2013)
Teachers College Record (2025, 2012)
IEEE Transactions on Learning Technologies (2017, 2014, 2012, 2011, 2010, 2009, 2008)
ACM Transactions on Interactive Intelligent Systems (2026, 2012)
Journal of Educational and Behavioral Statistics (2012)
Journal of Educational Computing Research (2012, 2011)
IEEE Transactions on Systems, Man, and Cybernetics (2012, 2010)
Computers and Education (2011)
Journal of Intelligent Information Systems (2011)
Journal of Intelligent Information Systems (2011)
International Journal of Artificial Intelligence in Education (2025,2023, 2022, 2010, 2006)
User Modeling and User-Adapted Interaction (2010, 2008, 2007, 2006)
The Internet and Higher Education (2010)
Artificial Intelligence Journal (2008)
ACM Transactions on the Web (2007)
Journal of Visual Languages and Computing (2007)
Cognition and Instruction (2006)

Book Reviewing. Oxford University Press (2011)

Workshop Organizing Committee. 3rd Annual Workshop on A/B Testing and Platform-Enabled Learning Research. *9th ACM Conference on Learning at Scale,* 2022.

Workshop Organizing Committee. 4th Annual Workshop on A/B Testing and Platform-Enabled Learning Research. *10th ACM Conference on Learning at Scale,* 2023.

Workshop Organizing Committee. Turn Theories into Products: Implementation of Artificial Intelligence in Education. *18th International Conference on Artificial Intelligence in Education.* 2017.

Workshop Organizing Committee. Workshop on Analyzing Student-Tutor Interaction Logs to Improve Educational Outcomes. *7th International Conference on Intelligent Tutoring Systems.* Chair: Joseph Beck. 2004.

Grant Reviewing.

Dutch Research Council (NRO) (2026)
Singapore Ministry of Education (2025)
Learning Engineering Virtual Institute (2023)
DARPA Tools Competition (2023)
Learning Engineering Tools Competition (2026, 2024, 2021, 2022)
Spencer Foundation (2018)
VolkswagenStiftung Foundation (2014)
Hewlett Foundation (2013)
NSF Social, Behavioral, and Economic Sciences (SBE) (2023, 2020, 2018, 2017, 2016, 2011)
NSF Computer & Information Science & Engineering (CISE) (2023, 2022, 2021, 2020, 2019, 2016, 2013, 2012, 2011, 2010, 2009)
NSF Education & Human Resources (EHR) (2025, 2023, 2022, 2020, 2013, 2012, 2011)

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Israel Science Foundation (2012)
US Department of Education, Institute of Education Sciences (2019, 2020, 2022; principal panel member, 2021, 2023-2025)

OTHER

Advisor. Human Potential Scientific Advisory Board, Ministry of Education, Singapore (2026-2027)

Academic Advisor. Swiss Cyber Institute (2025-present)

Scientific Advisor. Pittsburgh Science of Learning Center DataShop (2009-2013)

Research Lead. SoLAR Storm – distributed lab for Learning Analytics research students (2012-2013)

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