Ryan Shaun Joazeiro de Baker

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RESEARCH INTERESTS

Educational Data Mining, Learner-Computer Interaction, Gaming the System, Student Modeling (Strategic Behavior, Meta-Cognition, Affect, Cognition, Knowledge), Intelligent Tutoring Systems, Serious Games/Educational Games, Off-Task Behavior, Contextual Modeling, Cultural Factors

EDUCATION

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

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

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

CURRENT APPOINTMENTS

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

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

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

Associate Editor. Journal of Educational Data Mining. First issue anticipated Summer 2009.

PRIOR PROFESSIONAL EXPERIENCE

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.

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.

COURSES TAUGHT

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.

ADVISING

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.

Doctoral Thesis Committee Member. Elizabeth Anglo (thesis chair: Mercedes Rodrigo). Ph.D. student in Computer Science at Ateneo de Manila University. (in process)

Masters Thesis Reader. Geeta Shroff. (thesis chair: Matthew Kam). M.S. student in Computer Science at Carnegie Mellon University (in process).

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

Undergraduate Summer Internship. Owen Durni (with Vincent Aleven). B.S. student in Computer Science at Carnegie Mellon University.

Undergraduate Summer Research Project. Matthew Morrill (with Vincent Aleven). B.S. student in Computer Science at Carnegie Mellon University.

Undergraduate Summer Research Project. Brian Thompson (with Albert Corbett). B.S. student in Computer Science at Carnegie Mellon University.

External Examiner. Lichao Li (M.S. student in Information Technologies at University of Sydney).

OTHER TEACHING EXPERIENCE

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

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.

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.

Guest Lecturer. Educational Games. Instructor Vincent Aleven. Human-Computer Interaction Institute, Carnegie Mellon University. Fall 2007.

Guest Lecturer. Intelligent Tutoring Systems and Cognitive Modeling. Instructor Neil Heffernan. Department of Computer Science, Worcester Polytechnic Institute. Fall 2007.

Guest Lecturer. Information and Communication Technologies in Education. Module Convenor Charles Crook. Learning Sciences Research Institute, University of Nottingham. Fall 2006.

Guest Lecturer. Information and Communication Technologies in Education. Module Convenor Charles Crook. Learning Sciences Research Institute, University of Nottingham. Spring 2006.

Guest Lecturer. Telepresence Applications. Instructor Peter Coppin. Robotics Institute, Carnegie Mellon University. Fall 2003.

Guest Lecturer. Data Structures and Algorithms, Instructor Roberto Tamassia. Department of Computer Science, Brown University. Spring 2000.

PUBLICATIONS

Refereed Journal Papers

Baker, R.S.J.d., Corbett, A.T., Roll, I., Koedinger, K.R. (2008) Developing a Generalizable Detector of When Students Game the System. *User Modeling and User-Adapted Interaction, 18* (3), 287-314.

Baker, R.S.J.d., Walonoski, J.A., Heffernan, N.T., Roll, I., Corbett, A.T., Koedinger, K.R. (2008) Why Students Engage in "Gaming the System" Behavior in Interactive Learning Environments. *Journal of Interactive Learning Research*, 19 (2), 185-224.

Baker, R.S.J.d., Corbett, A.T., Koedinger, K.R. (2007) The Difficulty Factors Approach to the Design of Intelligent Tutoring Systems. *International Journal of Artificial Intelligence in Education,* 17 (4), 341-369.

Baker, R.S., Corbett, A.T., Koedinger, K.R. (2006) Responding to Problem Behaviors in Cognitive Tutors: Towards Educational Systems Which Support All Students. *National Association for the Dually Diagnosed (NADD) Bulletin,* 9 (4), 70-75.

Tamassia R., Goodrich M.T., Vismara L., Handy M., Cohen R., Hudson B., Baker, R.S., Gelfand, N., Shubina G., Brandes U. (2001) JDSL: The Data Structures Library in Java. *Dr. Dobb's Journal and Sourcebook*, April 2001, 21-33.

Refereed Book Chapters

Baker, R.S.J.d. (in press) Data Mining for Education. To appear in McGaw, B., Peterson, P., Baker, E. (Eds.) *International Encyclopedia of Education (3rd edition).* Oxford, UK: Elsevier.

Koedinger, K., Aleven, V., Roll, I., Baker, R. (in press) In vivo experiments on whether supporting metacognition in intelligent tutoring systems yields robust learning. To appear in Graesser, A., Hacker, D. (Eds.), *Handbook of Metacognition in Education*.

Refereed Conference Full Papers

Baker, R.S.J.d., de Carvalho, A.M.J.A., Raspat, J., Aleven, V., Corbett, A.T., Koedinger, K.R. (in press) Educational Software Features that Encourage and Discourage "Gaming the System". To

appear in the *Proceedings of the 14th International Conference on Artificial Intelligence in Education.*

Baker, R.S.J.d. (in press) Differences Between Intelligent Tutor Lessons, and the Choice to Go Off-Task. To appear in *Proceedings of the 2nd International Conference on Educational Data Mining.*

Rodrigo, M.M.T., Baker, R.S.J.d. (in press) Coarse-Grained Detection of Student Frustration in an Introductory Programming Course. To appear in the *Proceedings of ICER 2009: the International Computing Education Workshop.*

Rodrigo, M.M.T., Baker, R.S., Jadud, M.C., Amarra, A.C.M., Dy, T., Espejo-Lahoz, M.B.V., Lim, S.A.L., Pascua, S.A.M.S., Sugay, J.O., Tabanao, E.S. (in press) Affective and Behavioral Predictors of Novice Programmer Achievement. To appear in the *Proceedings of the 14th ACM-SIGCSE Annual Conference on Innovation and Technology in Computer Science Education.*

Prata, D.N., Baker, R.S.J.d., Costa, E., Rosé, C.P., Cui, Y., de Carvalho, A.M.J.B. (in press) Detecting and Understanding the Impact of Cognitive and Interpersonal Conflict in Computer Supported Collaborative Learning Environments. To appear in *Proceedings of the 2nd International Conference on Educational Data Mining.*

Cocea, M., Hershkovitz, A., Baker, R.S.J.d. (in press) The Impact of Off-task and Gaming Behaviors on Learning: Immediate or Aggregate? To appear in the *Proceedings of the 14th International Conference on Artificial Intelligence in Education.*

Baker, R.S.J.d., Corbett, A.T., Aleven, V. (2008) Improving Contextual Models of Guessing and Slipping with a Truncated Training Set. *Proceedings of the 1st International Conference on Educational Data Mining*, 67-76.

Baker, R.S.J.d., de Carvalho, A. M. J. A. (2008) Labeling Student Behavior Faster and More Precisely with Text Replays. *Proceedings of the 1st International Conference on Educational Data Mining*, 38-47.

Baker, R.S.J.d., Corbett, A.T., Aleven, V. (2008) More Accurate Student Modeling Through Contextual Estimation of Slip and Guess Probabilities in Bayesian Knowledge Tracing. *Proceedings of the 9th International Conference on Intelligent Tutoring Systems,* 406-415.

Rodrigo, M.M.T., Baker, R.S.J.d., d'Mello, S., Gonzalez, M.C.T., Lagud, M.C.V., Lim, S.A.L., Macapanpan, A.F., Pascua, S.A.M.S., Santillano, J.Q., Sugay, J.O., Tep, S., Viehland, N.J.B. (2008) Comparing Learners' Affect While Using an Intelligent Tutoring Systems and a Simulation Problem Solving Game. *Proceedings of the 9th International Conference on Intelligent Tutoring Systems,* 40-49.

Rodrigo, M.M.T., Anglo, E.A., Sugay, J.O., Baker, R.S.J.d. (2008) Use of Unsupervised Clustering to Characterize Learner Behaviors and Affective States while Using an Intelligent Tutoring System. *Proceedings of International Conference on Computers in Education.*

Rodrigo, M.M.T., Rebolledo-Mendez, G., Baker, R.S.J.d., du Boulay, B., Sugay, J.O., Lim, S.A.L., Espejo-Lahoz, M.B., Luckin, R. (2008) The Effects of Motivational Modeling on Affect in an Intelligent Tutoring System. *Proceedings of International Conference on Computers in Education.*

Baker, R.S.J.d. (2007) Modeling and Understanding Students' Off-Task Behavior in Intelligent Tutoring Systems. *Proceedings of ACM CHI 2007: Computer-Human Interaction,* 1059-1068. **[Honorable Mention for Best Paper Award]**

Baker, R.S.J.d., Rodrigo, M.M.T., Xolocotzin, U.E. (2007) The Dynamics of Affective Transitions in Simulation Problem-Solving Environments. *Proceedings of the Second International Conference on Affective Computing and Intelligent Interaction.*

Baker, R.S.J.d., Habgood, M.P.J., Ainsworth, S.E., Corbett, A.T. (2007) Modeling the Acquisition of Fluent Skill in Educational Action Games. *Proceedings of User Modeling 2007,* 17-26.

Rodrigo, M.M.T., Baker, R.S.J.d., Lagud, M.C.V., Lim, S.A.L., Macapanpan, A.F., Pascua, S.A.M.S., Santillano, J.Q., Sevilla, L.R.S., Sugay, J.O., Tep, S., Viehland, N.J.B. (2007) Affect and Usage Choices in Simulation Problem Solving Environments. *Proceedings of Artificial Intelligence in Education 2007,* 145-152.

Baker, R.S.J.d., Corbett, A.T., Koedinger, K.R., Evenson, E., Roll, I., Wagner, A.Z., Naim, M., Raspat, J., Baker, D.J., Beck, J. (2006) Adapting to When Students Game an Intelligent Tutoring System. *Proceedings of the 8th International Conference on Intelligent Tutoring Systems*, 392-401. **[Won Best Paper Award]** **(25 citations – Google Scholar, May 27, 2009)**

Baker, R.S.J.d., Corbett, A.T., Koedinger, K.R., Roll, I. (2006) Generalizing Detection of Gaming the System Across a Tutoring Curriculum. *Proceedings of the 8th International Conference on Intelligent Tutoring Systems*, 402-411. **[Finalist for Best Paper Award]**

Roll, I., Aleven, V., McLaren, B.M., Ryu, E., Baker, R.S.J.d., Koedinger, K.R. (2006) The Help Tutor: Does Metacognitive Feedback Improve Students' Help-Seeking Actions, Skills, and Learning? *Proceedings of the 8th International Conference on Intelligent Tutoring Systems*, 360-369.

Baker, R.S., Roll, I., Corbett, A.T., Koedinger, K.R. (2005) Do Performance Goals Lead Students to Game the System? *Proceedings of the International Conference on Artificial Intelligence and Education (AIED2005)*, 57-64. **[Finalist for Best Paper Award]**

Fogarty, J., Baker, R., Hudson, S. (2005) Case Studies in the use of ROC Curve Analysis for Sensor-Based Estimates in Human Computer Interaction. *Proceedings of Graphics Interface (GI 2005)*, 129-136.

Roll, R., Baker, R., Aleven, V., McLaren, B., Koedinger, K. (2005) Modeling Students' Metacognitive Errors in Two Intelligent Tutoring Systems. *Proceedings of User Modeling 2005*, 367-376.

Baker, R.S., Corbett, A.T., Koedinger, K.R. (2004) Detecting Student Misuse of Intelligent Tutoring Systems. *Proceedings of the 7th International Conference on Intelligent Tutoring Systems*, 531-540. **(79 citations – Google Scholar, May 27, 2009)**

Baker, R.S., Corbett, A.T., Koedinger, K.R. (2004) Learning to Distinguish Between Representations of Data: a Cognitive Tutor That Uses Contrasting Cases. *Proceedings of the International Conference of the Learning Sciences*, 58-65.

Baker, R.S., Corbett, A.T., Koedinger, K.R., Wagner, A.Z. (2004) Off-Task Behavior in the Cognitive Tutor Classroom: When Students "Game The System". *Proceedings of ACM CHI 2004: Computer-Human Interaction,* 383-390. **(71 citations – Google Scholar, May 27, 2009)**

Baker R.S., Corbett A.T., Koedinger K.R., Schneider, M.P. (2003) A Formative Evaluation of a Tutor for Scatterplot Generation: Evidence on Difficulty Factors. *Proceedings of the International Conference on Artificial Intelligence in Education*, 107-115.

Baker R.S., Corbett A.T., Koedinger K.R. (2002) The Resilience of Overgeneralization of Knowledge about Data Representations. Paper presented at American Educational Research Association Conference. Available from *Education Resources Information Center (ERIC) Database*, ERIC# ED465530.

Baker R.S., Corbett A.T., Koedinger K.R. (2001) Toward a Model of Learning Data Representations. *Proceedings of the 23rd Conference of the Cognitive Science Society*, 45-50. **(21 citations – Google Scholar, May 27, 2009)**

Baker, R.S., Boilen, M., Goodrich, M., Tamassia, R., and Stibel, B.A.(1999) Testers and Visualizers for Teaching Data Structures. *30th ACM SIGCSE Technical Symposium on Computer Science Education*, 261-265. **(51 citations – Google Scholar, May 27, 2009)**

Refereed Conference Short Papers and Poster Papers

Baker, R.S., Corbett, A., Koedinger, K., Roll, I. (2005) Detecting When Students Game The System, Across Tutor Subjects and Classroom Cohorts. *Proceedings of User Modeling 2005*, 220-224.

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. *Proceedings of 7th International Conference on Intelligent Tutoring Systems*, 785-787.

Roll, I., Baker, R.S., Aleven, V., Koedinger, K.R. (2004) A Metacognitive ACT-R model of Students' Learning Strategies in Intelligent Tutoring Systems. *Proceedings of 7th International Conference on Intelligent Tutoring Systems*, 854-856.

Roll, I., Baker, R.S., Aleven, V., Koedinger, K.R. (2004) What goals do students have when choosing the actions they perform? *Proceedings of 6th International Conference on Cognitive Modeling,* 380-381.

Dabbish L.A., Baker R.S. (2003) Administrative Assistants as Interruption Mediators. *ACM CHI: Computer-Human Interaction*, 1020-1021.

Edited Proceedings

Baker, R.S.J.d., Barnes, T., Beck, J.E. (Eds.) *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.) *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.) *Proceedings of the Workshop on Educational Data Mining, at the 8th International Conference on Intelligent Tutoring Systems.* Jhongli, Taiwan. July 2006.

Technical Reports

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

Shute, V., Levy, R., Baker, R., Beck, J. (2009) Intelligent Educational Systems with Embedded Assessment to Support Learning: A Peek into the Future. *Proceedings of the AIED2009 Workshop on Intelligent Educational Games.*

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.

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.*

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.

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.

Tutorials at Conferences

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

Other Workshop and Conference Participation

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.

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.

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*.

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. (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*.

INVITED SEMINARS

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.

AWARDS

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

Senior Prize in Computer Science. Brown University, 2000.

GRANTS, PROJECT AWARDS, AND FELLOWSHIPS

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). July 2009- June 2012. $1,447,525.

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). October 2009- September 2014. $25,000,000.

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.

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

CONSULTING

Majestic Mountain, LLC. 2009.

Engineering Research and Development for Technology Consortium, Philippines. Multidimensional Analysis of User-Machine Interactions Towards the Development of Models of Affect. For Rodrigo, M.M.T. (Project Lead), Ateneo de Manila University. 2008 - 2009.

McGraw-Hill. For Evenson, S.E. (Project Lead), Cherryhawk Communications. 2005.

ACADEMIC SERVICE

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

Conference Chair. *Third International Conference on Educational Data Mining.* Pittsburgh, PA, USA. Summer 2010.

Program Chair (with Joseph E. Beck). *First International Conference on Educational Data Mining*, Montreal, Canada, June 20-21, 2008.

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.

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.

Steering Committee. International Conference on Educational Data Mining (EDM) series/ International Working Group on Educational Data Mining. 2006-present.

Program Committee.   Educational Data Mining (2009)
       User Modeling and Adaptive Personalization (2009)
       Artificial Intelligence and Education (2009)
       ICCE Conference on AIED/ITS & Adaptive Learning (2009, 2008)
       Intelligent Tutoring Systems (2008)
       Flairs Special Track on Intelligent Tutoring Systems (2009, 2008)
       User Modeling (2007)
       Digital Game and Intelligent Toy Enhanced Learning (2007)
       Workshop on Closing the Affective Loop in Intelligent Learning
           Environments, AIED (2009)
       International Workshop on Intelligent Support in Exploratory
           Environments , ECTEL (2008), 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)
       Workshop on Metacognition and Self-Regulated Learning in
           Intelligent Tutoring Systems, AIED (2007)

Conference Reviewing. Computer-Human Interaction (2009, 2008, 2007)
       Intelligent Tutoring Systems (2008, 2006, 2002)
       Computers in Education (2008, 2006)
       Artificial Intelligence in Education (2007, 2005, 2003)
       Intelligent User Interfaces (2008)
       User Modeling (2007, 2003)
       Cognitive Science Society (2007, 2005, 2003)
       User Interface Software and Technology (2007)
       Digital Game and Intelligent Toy Enhanced Learning (2007)
       Cognitive Modeling (2004)
       European Cognitive Science Society (2003)
       American Educational Research Association (2003)
       Learning Sciences Conference (2002)
       Workshop on Social and Emotional Intelligence in Learning
           Environments, ITS (2004)

Journal Reviewing.   IEEE Transactions on Learning Technology (2009, 2008)
       User Modeling and User-Adapted Interaction (2008, 2007, 2006)
       Journal of Computer Assisted Learning (2008, 2007)
       Artificial Intelligence Journal (2008)
       ACM Transactions on the Web (2007)
       Journal of Visual Languages and Computing (2007)
       Cognition and Instruction (2006)
       International Journal of Artificial Intelligence in Education (2006)

Grant Reviewing.   NSF Computer & Information Science & Engineering (CISE) (2009)

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.