

**JOHN C. STAMPER**  
**john@stamper.org**

## **I. CURRICULUM VITAE**

### **EDUCATION**

**PhD, Information Technology (May 2010),  
University of North Carolina at Charlotte,  
Dissertation Title: Automatic Generation of Intelligent Tutoring Capabilities via Educational Data Mining.**

**Graduate Certificate in Cognitive Science (May 2007),  
University of North Carolina at Charlotte.**

**MBA, Business Administration and Management (May 2000),  
University of Cincinnati.**

**BS, Systems Analysis with special interest in Operations Research (December 1994),  
Miami University.**

### **EMPLOYMENT**

**Systems Scientist,  
Human-Computer Interaction Institute,  
Carnegie Mellon University, (Aug 2009 – Present).**

**Technical Director,  
Pittsburgh Science of Learning Center DataShop  
Carnegie Mellon University, (Aug 2009 – Present).**

**Research Assistant,  
Game and Learning Lab,  
Department of Computer Science,  
University of North Carolina at Charlotte, (Aug 2005 – Aug 2009).**

**Adjunct Instructor,  
Department of Marketing, Belk College of Business,  
University of North Carolina at Charlotte, (Aug 2008 – Dec 2008).  
Courses include: Internet Marketing**

**Teaching Assistant,  
Department of Computer Science,  
University of North Carolina at Charlotte, (Aug 2006 – Aug 2008).  
Courses include: Game Development, Intelligent Tutoring Systems, Introduction to Computer Applications,  
and Discrete Mathematics**

**Research Assistant,  
Distributed Artificial Intelligence Research Lab,  
Department of Software and Information Systems,  
University of North Carolina at Charlotte, (Aug 2004 – Aug 2005).**

**Adjunct Professor,**  
**Department of Computer Information Systems,**  
**College of Mount St. Joseph, Cincinnati, OH, (Aug 2001 – June 2002)**  
**Courses include: Intro to Programming, Advanced Programming, and Data Communications**

**Vice President of Development,**  
**VSI Technologies, Inc.**  
**Cincinnati, OH (Jun 1999 – Aug 2004)**

**Manager of Information Systems,**  
**ProtoCall, LLC.**  
**Cincinnati, OH (May 1997 – Jun 1999)**

**Programmer/Analyst,**  
**Lehmkuhl & Associates, Inc.**  
**Blue Ash, OH (Oct 1994 – May 1997)**

## II. PUBLICATION LIST

### CHAPTERS IN BOOKS

1. Barnes, T., Stamper, J. & Croy, M. (2010). Using Markov decision processes for student problem-solving visualization and automatic hint generation. In Romero, C., Ventura, S., Pechenizkiy, M., Baker, R.S.J.d. (Eds.) Handbook of Educational Data Mining. Boca Raton, FL: CRC Press.
2. Koedinger, K.R., Baker, R.S.J.d., Cunningham, K., Skogsholm, A., Leber, B., Stamper, J. (2010) A Data Repository for the EDM community: The PSLC DataShop. In Romero, C., Ventura, S., Pechenizkiy, M., Baker, R.S.J.d. (Eds.) Handbook of Educational Data Mining. Boca Raton, FL: CRC Press.
3. Croy, M., T. Barnes, Stamper, J. (2007). Towards an Intelligent Tutoring System for propositional proof construction. In Philip Brey, Adam Briggie and Katinka Waelbers (eds.), Current Issues in Computing and Philosophy, Amsterdam, Netherlands: IOS Publishers.

### REFEREED JOURNAL PAPERS - PUBLISHED

4. Stamper, J., Barnes, T., Croy, M. (2011). Enhancing the Automatic Generation of Hints with Expert Seeding. In *The International Journal of Artificial Intelligence in Education (IJAIED)*, Special Issue on the Best of ITS 2010.
5. Barnes, T. & Stamper, J. (2009). Automatic hint generation for logic proof tutoring using historical data. In *Journal of Educational Technology & Society*, Special issue on Intelligent Tutoring Systems, Volume 13, Issue 1.

### REFEREED CONFERENCE/WORKSHOP PAPERS

6. Koedinger, K., McLaughlin, E., Stamper, J., Automated Student Model Improvement. In *Proceedings of the 5th International Conference on Educational Data Mining (EDM 2012)*. Chania, Greece. Jun 19-21, 2012. pp. 17-24. **[BEST PAPER Award]**
7. Jin, W., Barnes, T., Stamper, J., Eagle, M., Johnson, M., Lehmann, L. (2012) Program Representation for Automatic Hint Generation for a Data-Driven Novice Programming Tutor. In *Proceeding of the 11th International Conference on Intelligent Tutoring Systems(ITS2012)*. pp.304-309. Springer.
8. Lomas, D., Stamper, J., Muller, R., Patel, K., Koedinger, K. (2012) The Effects of Adaptive Sequencing Algorithms on Player Engagement within an Online Game. In *Proceeding of the 11th International Conference on Intelligent Tutoring Systems(ITS2012)*. pp.588-590. Springer.
9. Ritter, S., Nixon, T., Lomas, D., Stamper, J., Ching, D. (2012) Using Time Pressure to Promote Mathematical Fluency. In *Proceeding of the 11th International Conference on Intelligent Tutoring Systems(ITS2012)*.pp.669-670. Springer.

10. Stamper, J., Lomas, D., Ching, D., Ritter, S., Koedinger K., Steinhart, J. (2012) The Rise of the Super Experiment. In *Proceedings of the 5th International Conference on Educational Data Mining (EDM 2012)*. Chania, Greece. Jun 19-21. pp. 196-200.
11. Stamper, J., Lomas, D., Ching, D., Linch, K., Ritter, S. (2012) Internet Scale Experimental Design and Deployment for Educational Games using BrainPOP. In *Proceedings of the 8th Games + Learning + Society Conference (GLS 2012)*. Madison, WI. pp.257-281.
12. Stamper, J., Barnes, T., and Croy, M. (2011) Experimental Evaluation of Automatic Hint Generation for a Logic Tutor. In Kay, J., Bull, S. and Biswas, G. eds. *Proceeding of the 15th International Conference on Artificial Intelligence in Education (AIED2011)*. pp. 345-352. Berlin Germany:Springer Verlag. **[Best Paper Finalist]**
13. Stamper, J., Koedinger, K.R. (2011) Human-machine Student Model Discovery and Improvement Using DataShop. In Kay, J., Bull, S. and Biswas, G. eds. *Proceeding of the 15th International Conference on Artificial Intelligence in Education (AIED2011)*, pp. 353-360. Berlin Germany:Springer Verlag.
14. Stamper, J., Koedinger, K.R., Baker, R., Skogsholm, A., Leber, B., Demi, S., Yu, S., Spencer, D. (2011) Managing the Educational Dataset Lifecycle with DataShop. In Kay, J., Bull, S. and Biswas, G. eds. *Proceeding of the 15th International Conference on Artificial Intelligence in Education (AIED2011)*.
15. Kodeinger, K.R., Pavlik, P., Stamper, J., Nixon, T., Ritter, S. (2011). Fair Blame Assignment in Student Modeling, In *Pechenizkiy, M., Calders, T., Conati, C., Ventura, S., Romero, C., and Stamper, J. (Eds.) Proceedings of the 4th International Conference on Educational Data Mining (EDM 2011)*. pp. 91-100. Eindhoven, the Netherlands.
16. Stamper, J., Barnes, T., and Croy, M. (2010) Enhancing the Automatic Generation of Hints with Expert Seeding. In *Aleven, V., Kay, J., and Mostow., J eds. Proceeding of the 10th International Conference on Intelligent Tutoring Systems(ITS2010)*, vol. II, pp. 31-40. Berlin, Germany: Springer Verlag. **[Best Student Paper]**
17. Stamper, J., Barnes, T., Croy, M. (2010). Using a Bayesian Knowledge Base for Hint Selection on Domain Specific Problems. In *Baker, R.S.J.d., Merceron, A., Pavlik, P.I. Jr. (Eds.) Proceedings of the 3rd International Conference on Educational Data Mining. (EDM 2010)*, pp. 327-328. Pittsburgh, PA. (poster)
18. Koedinger, K., Stamper, J. (2010). A Data Driven Approach to the Discovery of Better Cognitive Models. In *Baker, R.S.J.d., Merceron, A., Pavlik, P.I. Jr. (Eds.) Proceedings of the 3rd International Conference on Educational Data Mining. (EDM 2010)*, pp. 325-326. Pittsburgh, PA. (poster)
19. Barnes, T., Stamper, J. (2009) Utility in hint generation: Selection of hints from a corpus of student work. *14th Intl. Conf. on AI in Education (AIED)*, Brighton, UK, (poster)
20. Stamper, J. Barnes, T. (2009) An Unsupervised, Frequency-based Metric for Selecting Hints in an MDP-based Tutor. 2nd Intl. Conf. on Educational Data Mining (EDM 2009), Cordoba, Spain, pp. 180-189.
21. Barnes, T., Stamper, J. (2008). Toward Automatic Hint Generation for Logic Proof Tutoring Using Historical Student Data. In E. Aimeur, & B. Woolf (Eds.) *Proceedings of the 9th International Conference on Intelligent Tutoring Systems (ITS 2008)*, pp. 373-382. Berlin, Germany: Springer Verlag. **[Best Paper Finalist]**
22. Stamper, J., Barnes, T., Croy, M., Lehmann, L. (2008) The Validity of Providing Automated Hints in an ITS Using a MDP. In *Proceedings of the 23nd AAAI Conference on Artificial Intelligence (AAAI 2008)*, pp. 1830-1831. Menlo Park, CA: AAAI Press. (Poster)
23. Barnes, T., Stamper, J., Croy, M., Lehman, L. (2008). A Pilot Study on Logic Proof Tutoring Using Hints Generated from Historical Student Data. In R. Baker, T. Barnes, J. Beck (Eds.) *Proceedings of the 1st International Conference on Educational Data Mining (EDM 2008)*, pp. 197-201. Montreal, Canada.
24. Stamper, J., Barnes, T., Croy, M. (2007) Extracting Student Models for Intelligent Tutoring Systems. In *Proceedings of the 22nd AAAI Conference on Artificial Intelligence (AAAI 2007)*, pp. 1900-1901. Menlo Park, CA: AAAI Press.
25. Barnes, T., Stamper, J. (2007). Toward the extraction of production rules for solving logic proofs. In C. Heiner, T. Barnes, & N. Heffernan (Eds.) *Proceedings of the 13th International Conference on Artificial Intelligence in Education, Educational Data Mining Workshop (AIED2007)*, pp. 11-20. Los Angeles, CA.
26. Stamper, J. (2007). Automating the Generation of Student Models for Intelligent Tutoring Systems. In R. Luckin, K. Koedinger, & J. Greer (Eds.), *Proceedings of the 13th International Conference on Artificial Intelligence in Education (AIED 2007)*. pp. 701-702. Amsterdam, the Netherlands: IOS Press.

27. Stamper, J., Carmichael, T. (2007). A Complex Adaptive System Approach to Predictive Data Insertion for Missing Student Data. In Proceedings of the 3rd Int. Conference on Computer Blended Learning (ICBL 2007), Florinopolis, Brazil, May 2007. Kassel University Press.
28. Stamper, J. (2006). Automating the Generation of Production Rules for Intelligent Tutoring Systems. In Proceedings of the 9th International Conference on Interactive Computer Aided Learning (ICL2006), Villach, Austria. Kassel University Press.
29. Barnes, T., Stamper, J., Madhyastha, T. Comparative Analysis of Concept Derivation Using the Q-matrix Method and Facets. In J. Beck and T. Barnes (Eds.) Proceedings of the AAAI 21th National Conference on Artificial Intelligence Educational Data Mining Workshop (AAAI2006), pp. 21-30. Menlo Park, CA: AAAI Press.
30. Howitt, I., Stamper, J., Raja, A., Mappillai, V., Predictive Protocol Management with Contingency Planning for Wireless Sensor Networks. In Proceedings of The 2nd IEEE International Conference on Mobile Ad-hoc and Sensor Systems (MASS 2005), pp. 160-162, 2005.

### **UNREFEREED CONFERENCE/WORKSHOP PAPERS**

31. Stamper, J., Barnes, T. (2008). The Hint Factory: Automatic Generation of Contextualized Help for Existing Computer Aided Instruction. In G. Gouarderes, & R.M. Vicari (Eds.) Proceedings of the 9th International Conference on Intelligent Tutoring Systems Young Researchers Track, pp. 71-78. Montreal, Canada.

### **SOFTWARE ARTIFACTS**

1. DataShop 6.0 (Oct 2012)
2. DataShop 5.3 (May 2012)
3. DataShop 5.2 (Jan 2012)
4. DataShop 5.1 (Oct 2011)
5. DataShop 5.0 (May 2011)
6. DataShop 4.4 (Dec 2010)
7. DataShop 4.2 (Apr 2010)
8. DataShop 4.0 (Feb 2010)
9. DataShop 3.6 (Oct 2009)
10. DataShop 3.5 (Sep 2009)

## **III. EVIDENCE OF EXTERNAL REPUTATION**

### **CITATIONS AND AWARDS**

- 5th International Conference on Educational Data Mining (EDM 2012), Best Paper Award
- 15th International Conference on Artificial Intelligence in Education (AIED 2011), Best Paper Honorable Mention
- 10th International Conference on Intelligent Tutoring Systems (ITS 2010), Best Paper Honorable Mention
- 10th International Conference on Intelligent Tutoring Systems (ITS 2010), Best Student Paper Award
- 10th International Conference on Intelligent Tutoring Systems (ITS 2010), Outstanding Reviewer Award
- 9th International Conference on Intelligent Tutoring Systems (ITS 2008), Best Paper Honorable Mention

### **KEYNOTE TALKS**

- Using Data-Driven Discovery Techniques for the Design and Improvement of Educational Systems, MedBiquitous Annual Conference, Baltimore, MD, (To Present April, 2013).
- The Educational Data Mining Challenge, Reflections on the 2010 KDD Cup, Keynote for the 4<sup>th</sup> International Conference on Educational Data Mining, Eindhoven, Netherlands, (July 2011).
- DataShop: An Open Repository of Educational Data, Keynote for the 1st workshop on Data Sets for Technology Enhanced Learning at the 2nd STELLAR Alpine Rendez-Vous in La Clusaz, France (March 2011).

## **INVITED TALKS**

- Using DataShop for Continuous Course Improvement, Open Learning Initiative Hands On Workshop, Pittsburgh, PA, (Oct, 2012).
- DataShop: An Educational Data Mining Platform for the Learning Science Community, Open Learning Initiative Hands On Workshop, Pittsburgh, PA, (July, 2012).
- DataShop: An Educational Data Mining Platform for the Learning Science Community, NYU Consortium for Research and Evaluation of Advanced Technologies in Education, New York, NY, (May, 2012).
- Educational Data Mining meets Learning Analytics, 2<sup>nd</sup> Conference on Learning Analytics and Knowledge Panel Discussant, Vancouver , Canada, (April, 2012).
- Online Learning and Gaming: Seeking Evidence of Impact, Miami University Computer Science Alumni Conference, Oxford, OH, (Mar 2012).
- The Challenges of Evaluating Game Log Data, Educause Learning Initiative (ELI) annual meeting. Austin TX, (Feb 2012).
- Transformational Model of Translational Research that Leverages Educational Technology for Fast Data-Discovery Feedback Loops, Organization of Economic Cooperation and Development OECD/NSF Workshop, Paris France, (Jan 2012).
- Data-Driven Discovery of Cognitive Models for the Design of Better Intelligent Tutors, UNC Charlotte, (Jan 2012).
- Concerns of Data Sharing Panel at the National Academy of Education summit on Adaptive Educational Technologies, NAED Washington DC (Dec 2011).
- PSLC DataShop: Data Coding, Management, and Sharing , OpenShapa to Open Sharing Workshop, NSF Washington DC, (Sept 2011).
- DataShop Repository for Educational Data, National Academy of Education, (May 2011).
- Securing OpenInsight, Revelation Software User Conference, Las Vegas, (April 2010).
- OI to SQL Primer, Revelation Software Users Conference, Las Vegas, (May 2008).
- Exploiting the System Tables, Revelation Software Users Conference, Seattle, WA, (Jan 2007).
- Import/Export Strategies for OpenInsight, Revelation Software Users Conference, New Orleans, LA, (Jun 2004).
- Managing IT as a Solutions Provider, Seminar for Organizational Leadership, College of Mount Saint Joseph, Cincinnati, OH, (Oct 2002).
- Reporting with Multi-Dimensional Databases, Panel Discussion, International Spectrum Conference, Cincinnati, OH, (Sept 2002).
- Enterprise Resource and Planning, Panel Discussion, University of Cincinnati, Cincinnati, OH, (Mar 2002).

## **SEMINARS & COLLOGUIA**

- Data-Driven Discovery of Cognitive Models for the Design of Better Intelligent Tutors, Miami University, (Mar 2012).
- Automatic Generation of Intelligent Tutoring Capabilities using Student Data, Intelligent Systems Program AI Forum, University of Pittsburgh, (Dec 2010).
- The Hint Factory: Automatic Generation of Contextualized Help for Existing Computer Aided Instruction, Pittsburgh Science of Learning Center Seminar, Carnegie Mellon University, (Oct 2008).

## **IV. EXTERNAL PROFESSIONAL ACTIVITIES**

### **CONFERENCE AND WORKSHOP COMMITTEES**

- 6<sup>th</sup> International Conference on Educational Data Mining, EDM 2013 (Program Committee)
- 16th International Conference on AI in Education, AIED 2013 (Sponsorship Chair, Senior Program Committee)
- Learning Curve Tutorial at the 3<sup>rd</sup> Conference on Learning Analytics and Knowledge, LAK2013 (Chair)
- 3<sup>rd</sup> Conference on Learning Analytics and Knowledge, LAK2013 (Program Committee)
- 5th International Conference on Educational Data Mining, EDM 2012 (Conference Chair)
- 11th International Conference on Intelligent Tutoring Systems, ITS 2012 (Program Committee)

- DataShop Import Tutorial at AIED 2011 (Chair)
- 15th International Conference on AI in Education, AIED2011 (Senior Program Committee)
- 4th International Conference on Educational Data Mining, EDM2011 (Poster/Demo Co-Chair, Program Committee)
- 2011 KDD Workshop on Knowledge Discovery in Educational Data (Chair)
- AAAI 2010 Fall Symposium on Complex Adaptive Systems (Program Committee)
- 3rd International Conference on Educational Data Mining , EDM2010 (Local Chair)
- 2010 KDD Cup Workshop on Educational Data Mining (Co-Chair)
- DataShop Tutorial at 10th International Conference on ITS (Chair)
- 10th International Conference on Intelligent Tutoring Systems (Program Committee)
- AAAI 2009 Fall Symposium on Complex Adaptive Systems (Program Committee)
- 1st International Conference on Educational Data Mining, Montreal, Canada, Summer 2008 (Reviewer)
- 13th International Conference on AI in Education, Workshop on Educational Data Mining, AIED2007 (Program Committee)
- 21st National Conference on AI, Workshop on Educational Data Mining, 2006 (Reviewer)

## **MEMBERSHIPS IN PROFESSIONAL SOCIETIES**

- International Educational Data Mining Society (IEDMS)
- AI in Education Society
- Society for Learning Analytics Research (SOLAR)

## **PROFESSIONAL CERTIFICATIONS**

- Microsoft Certified Systems Engineer (MCSE)
- Microsoft Certified Database Administer (MCDBA)

## **OTHER**

- Building the Field of Learning Analytics, Workshop meeting , Stanford University, October 2012 (Participant)
- Intel Science and Engineering Fair, Pittsburgh, PA, May 2012 (Judge in Computer Science)
- Carnegie Mellon Leadership Symposium, January 2011 (Participant)
- KDD CUP 2010 Challenge associated with ACM SIGKDD (Co-Chair)
- 6th Annual Pittsburgh Science of Learning Center LearnLab Summer School, Carnegie Mellon University, Summer 2010 (Mentor – EDM Track)
- Interactive Event – DataShop, 10th International Conference on Intelligent Tutoring Systems (ITS 2010)
- Fourth Annual Pittsburgh Science of Learning Center LearnLab Summer School, Carnegie Mellon University, Summer 2008 (Participant)
- Chautauqua on Teaching Communication Skills in the Software Engineering Curriculum, NSF CPATH supported, at Miami University, Summer 2008 (Participant)
- College of Computing and Informatics Graduate Curriculum Committee, University of North Carolina at Charlotte, Sept 2007 – Aug 2009 (Committee Member)
- Doctoral Consortium, 13th International Conference on AI in Education, Los Angeles, Summer 2007 (Participant)
- NSF EAPSI Fellow, Sung Kyun Kwan University, Suwon Korea, Summer 2007 (Participant)
- Fourth Americas School on Agents and Multiagent Systems, Carnegie Mellon University, Summer 2005 (Participant)
- Computer Information Systems Advisory Board, College of Mount Saint Joseph, Aug 2002 – Aug 2004 (Committee Member)