

DIANE J. LITMAN

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EDUCATION

Ph.D. 1986

Computer Science, University of Rochester, Rochester, NY

Thesis: *Plan Recognition and Discourse Analysis: An Integrated Approach for Understanding Dialogues*; Advisor: James F. Allen

M.S. 1982

Computer Science, University of Rochester, Rochester, NY

A.B. 1980

Mathematics and Computer Science (double major), The College of William and Mary, Williamsburg, VA

EMPLOYMENT

2010 to 2011: Director, Intelligent Systems Program, University of Pittsburgh, Pittsburgh, PA

2008 to present: Senior Scientist, Learning Research and Development Center, University of Pittsburgh, Pittsburgh, PA

2007 to 2008: Leverhulme Visiting Professor, School of Informatics, University of Edinburgh, Scotland, UK

2005 to present: Professor, Computer Science Department, University of Pittsburgh, Pittsburgh, PA

2001 to present: Faculty, Intelligent Systems Program, University of Pittsburgh, Pittsburgh, PA

2001 to 2008: Research Scientist, Learning Research and Development Center, University of Pittsburgh, Pittsburgh, PA

2001 to 2005: Associate Professor, Computer Science Department, University of Pittsburgh, Pittsburgh, PA

1996 to 2001: Principal Technical Staff Member, Artificial Intelligence Principles Research Department, AT&T Labs - Research, Florham Park, NJ

1992 to 1996: Member of Technical Staff, Artificial Intelligence Principles Research Department, AT&T Bell Laboratories, Murray Hill, NJ

1990 to 1992: Assistant Professor, Computer Science Department, Columbia University, New York, NY

1985 to 1990: Member of Technical Staff, Artificial Intelligence Principles Research Department, AT&T Bell Laboratories, Murray Hill, NJ

CITIZENSHIP

United States

HONORS

Best Paper Award at 10th International Conference on Intelligent Tutoring Systems (ITS) for "Do Micro-Level Tutorial Decisions Matter: Applying Reinforcement Learning To Induce Pedagogical Tutorial Tactics" by Chi, VanLehn and Litman, Pittsburgh, PA, 2010

James Chen Award for the Best Student Paper at 18th International Conference on User Modelling, Adaptation and Personalization (UMAP) for "Inducing Effective Pedagogical Strategies Using Learning Context Features" by Chi, VanLehn, Litman and Jordan, Kona, Hawaii, 2010

Outstanding Reviewer Award for ITS2010

Best Student Paper Award Nominee at 10th Annual Meeting of the Special Interest Group on Discourse and Dialogue (SIGDIAL) for "Discourse Structure and Performance Analysis: Beyond the Correlation" by Rotaru and Litman, London, England, 2009

Best Paper Award (Late-Breaking News) at Human Language Technology Conference: Annual Meeting of the North American Chapter of the Association for Computational Linguistics (NAACL-HLT) for "Exploring Affect-Context Dependencies for Adaptive System Development" by Forbes-Riley, Rotaru, Litman, and Tetreault, Rochester, New York, 2007

People's Choice Best Paper Award for "Discourse Structure and Speech Recognition Problems" (with M. Rotaru), Ninth International Conference on Spoken Language Processing (Interspeech/ICSLP), 2006

Speech Communications Best Paper Award 2003-2004 for "Prosodic and Other Cues to Speech Recognition Failures" (with J. Hirschberg and M. Swerts), European Association for Signal Processing (Eurasip), 2005

Plenary System Demonstration of "ITSPOKE: An Intelligent Tutoring Spoken Dialogue System," Human Language Technology Conference: 4th Meeting of the North American Chapter of the Association for Computational Linguistics (HLT/NAACL), 2004

Best Paper Award for "Evaluating Spoken Language Systems" (with C. Kamm, M. Walker), American Voice Input/Output Society (AVIOS), 1999

AT&T Recognition Award, 1998

Excellence in Innovation Award, AT&T Network Services Division, 1994

Individual Performance Award, AT&T Bell Laboratories, 1989

Linguistic Society of America Fellowship, 1983

High Honors in Computer Science for Senior Research, 1980

Phi Beta Kappa, 1979

RESEARCH SUPPORT

Co-Principal Investigator, "Keeping Instructors Well-informed in Computer-Supported Peer Review" (with K. Ashley (PI), C. Schunn and J. Wang (Co-PIs)), University of Pittsburgh Learning Research and Development Center Internal Grant Competition, July 2011-June 2013, \$131,100.

Principal Investigator, Amendment to "RI: Small: An Affect-Adaptive Spoken Dialogue System that Responds Based on User Model and Multiple Affective States" (with K. Forbes-Riley (Co-PI)), National Science Foundation Research Experiences for Undergraduates Program, March 2011 - August 2012, \$8,000.

Co-Principal Investigator, "Improving a Natural-language Tutoring System That Engages Students in Deep Reasoning Dialogues About Physics" (with S. Katz (PI), P. Jordan (Co-PI), M. Ford (Co-PI)), United States Department of Education Institute of Education Sciences, June 1 2010-May 31 2013, \$1,318,110.00.

Principal Investigator, "Student Research Workshop in Computational Linguistics at the NAACL HLT 2010 Conference", National Science Foundation, May 1 2010-April 30 2011, \$18,000.

Principal Investigator, "RI: Small: An Affect-Adaptive Spoken Dialogue System that Responds Based on User Model and Multiple Affective States" (with K. Forbes-Riley (Co-PI)), National Science Foundation, September 1 2009-August 31 2012, \$452,745.

Principal Investigator, "Improving Learning from Peer Review with NLP and ITS Techniques" (with Christian Schunn and Kevin Ashley (Co-PIs)), University of Pittsburgh Learning Research and Development Center Internal Grant Competition, July 2009-June 2011, \$150,000.

Principal Investigator, Amendment to "Adapting to Student Uncertainty over and above Correctness in a Spoken Tutoring Dialogue System," National Science Foundation Research Experiences for Undergraduates Program, 2008 - 2011, \$12,000.

Visiting Professorship Award (with J. Moore, University of Edinburgh (Applicant Institution)), The Leverhulme Trust, August 2007-May 2008, 60,492 British Pounds.

Co-Principal Investigator, "Cohesion in Tutorial Dialogue and its Impact on Learning" (with S. Katz (PI)), Office of Naval Research, October 16 2006 - September 30 2009, \$761,625.

Principal Investigator, "Does Treating Student Uncertainty as a Learning Impasse Improve Learning in Spoken Dialogue Tutoring?" (with K. Forbes-Riley (Co-PI)), Pittsburgh Science of Learning Center (funded by the National Science Foundation), October 1 2006 - May 31 2007, \$72,156.

Principal Investigator, "Adapting to Student Uncertainty over and above Correctness in a Spoken Tutoring Dialogue System" (with K. Forbes-Riley (Co-PI)), National Science Foundation Advanced Learning Technologies Program, September 1 2006 - August 31 2009, \$480,000.

Principal Investigator, Amendment to "Collaborative Research: Monitoring Student State in Tutorial Spoken Dialogue", National Science Foundation Research Experiences for Undergraduates Program, September 1 2005 - August 31 2007, \$10,800.

Co-Principal Investigator, "Tutalk: Infrastructure for Authoring and Experimenting with Natural Language Dialogue in Tutoring Systems and Learning Research" (with P. Jordan (PI) and C. Rose (PI at Carnegie Mellon University)), Pittsburgh Science of Learning Center (funded by the National Science Foundation), December 1 2004 - November 30 2006, \$430,761 (\$270,388 to University of Pittsburgh).

Senior Personnel, "SLC Center: Pittsburgh Science of Learning Center: Studying Robust Learning with Learning Experiments in Real Classrooms" (K. Koedinger, Carnegie Mellon University (PI), D. Klahr, C. Perfetti and K. VanLehn (Co-PIs)), National Science Foundation Science of Learning Centers Program, October 1 2004 - September 30 2009, \$25,000,000 to Carnegie Mellon University and the University of Pittsburgh.

Co-Principal Investigator, "ITR: Natural Language Processing Technology for Guided Study of Bioinformatics" (with D. Roth, University of Illinois at Urbana-Champaign (PI), J. Pellegrino, S. Rodriguez-Zas, and C. Zhai), National Science Foundation Information Technology Research (ITR) for National Priorities Program, September 15 2004-August 31 2008, \$1,025,002 (\$107,000 to University of Pittsburgh).

Co-Principal Investigator, "ITR: Tutoring Scientific Explanations via Natural Language Dialogue" (with K. VanLehn (PI), M. Chi, P. Jordan, and C. Rose), National Science Foundation ITR Medium Grants Program, January 1 2004-December 31 2007, \$2,500,000.

Principal Investigator, "Adding Spoken Language to a Text-Based Dialogue Tutor," Office of Naval Research, November 17 2003 - September 30 2006, \$389,969.

Principal Investigator, "Collaborative Research: Monitoring Student State in Tutorial Spoken Dialogue" (with J. Hirschberg, Columbia University), National Science Foundation Human Language and Communication Program, September 1 2003 - August 31 2007, \$690,003 (\$420,003 to University of Pittsburgh).

"Extracting Constraints on Word Usage from Text Corpora" (with K. McKeown (PI)), Office of Naval Research and Defense Advanced Research Projects Agency, 1991-1994, \$1,032,247.

PUBLICATIONS

Journal Articles

- (1) Min Chi, Kurt VanLehn, Diane Litman, and Pamela Jordan, "An Evaluation of Pedagogical Tutorial Tactics for a Natural Language Tutoring System: A Reinforcement Learning Approach," *International Journal of Artificial Intelligence in Education*, to appear.
- (2) Hua Ai and Diane Litman, "Comparing User Simulation Models for Dialog Strategy Learning," *ACM Transactions on Speech and Language Processing*, to appear.
- (3) Kate Forbes-Riley and Diane Litman, "Benefits and Challenges of Real-Time Uncertainty Detection and Adaptation in a Spoken Dialogue Computer Tutor," *Speech Communication*, in press (available online).
- (4) Hua Ai and Diane Litman, "Assessing User Simulation for Dialog Systems using Human Judges and Automatic Evaluation Measures," *Natural Language Engineering*, in press (available online).
- (5) Min Chi, Kurt VanLehn, Diane Litman, and Pamela Jordan, "Empirically evaluating the application of Reinforcement Learning to the Induction of Effective and Adaptive Pedagogical Tactics," *User Modeling and User-Adapted Interaction*, Vol. 21, Numbers 1-2, pp. 137-180, 2011.
- (6) Kate Forbes-Riley and Diane Litman, "Designing and Evaluating a Wizarded Uncertainty-Adaptive Spoken Dialogue Tutoring System," *Computer Speech and Language*, Vol. 25, Issue 1, pp. 105-126, 2011.
- (7) Joel R. Tetreault and Diane J. Litman, "A Reinforcement Learning Approach to Evaluating State Representations in Spoken Dialogue Systems," *Speech Communication*, Vol. 50, Issues 8-9, pp. 683-696, 2008.
- (8) Kate Forbes-Riley, Mihai Rotaru, and Diane J. Litman, "The Relative Impact of Student Affect on Performance Models in a Spoken Dialogue Tutoring System," *User Modeling and User-Adapted Interaction*, Vol. 18, Nos. 1-2, pp. 11-43, 2008.
- (9) Diane Litman, Julia Hirschberg, and Marc Swerts, "Characterizing and Predicting Corrections in Spoken Dialogue Systems," *Computational Linguistics*, Vol. 32, No. 3, pp. 417-438, 2006.
- (10) Diane J. Litman, Carolyn P. Rose, Kate Forbes-Riley, Kurt VanLehn, Dumisizwe Bhembe, and Scott Silliman, "Spoken Versus Typed Human and Computer Dialogue Tutoring," *International*

Journal of Artificial Intelligence in Education (Special Issue: Best of ITS 2004), Vol. 16, Number 2, pp. 145-170, 2006.

- (11) Diane Litman and Kate Forbes-Riley, "Correlations between Dialogue Acts and Learning in Spoken Tutoring Dialogues," *Natural Language Engineering*, Vol. 12, Issue 02, pp. 161-176, June 2006.
- (12) Diane J. Litman and Kate Forbes-Riley, "Recognizing Student Emotions and Attitudes on the Basis of Utterances in Spoken Tutoring Dialogues with both Human and Computer Tutors," *Speech Communication*, Vol. 48, No. 5, pp. 559-590, May 2006.
- (13) Julia Hirschberg, Diane Litman, and Marc Swerts, "Prosodic and Other Cues to Speech Recognition Failure," *Speech Communication*, Vol. 43, Nos. 1-2, pp. 155-175, June 2004.
- (14) Diane J. Litman, Peter F. Patel-Schneider, Anil K. Mishra, James M. Crawford, and Daniel L. Dvorkak, "R++: Adding Path-Based Rules to C++," *IEEE Transactions on Knowledge and Data Engineering*, Vol. 14, No. 3, pp. 638-658, May/June 2002.
- (15) Diane J. Litman and Shimei Pan, "Designing and Evaluating an Adaptive Spoken Dialogue System," *User Modeling and User-Adapted Interaction*, Vol. 12, No. 2/3, pp. 111-137, 2002.
- (16) Satinder Singh, Diane Litman, Michael Kearns, and Marilyn Walker, "Optimizing Dialogue Management with Reinforcement Learning: Experiments with the NJFun System," *Journal of Artificial Intelligence Research*, Vol. 16, pp. 105-133, 2002.
- (17) Ingrid Zukerman and Diane Litman, "Natural Language Processing and User Modeling: Synergies and Limitations," *User Modeling and User-Adapted Interaction*, Vol. 11, No. 1/2, pp. 129-158, 2001.
- (18) Marilyn Walker, Candace Kamm, and Diane Litman, "Towards Developing General Models of Usability with PARADISE," *Natural Language Engineering*, Vol. 6, No. 3, 2000.
- (19) Marilyn A. Walker, Diane J. Litman, Candace A. Kamm, and Alicia Abella, "Evaluating Spoken Dialogue Agents with PARADISE: Two Case Studies," *Computer Speech and Language*, Vol. 12, No. 3, pp. 317-347, 1998.
- (20) Rebecca J. Passonneau and Diane J. Litman, "Discourse Segmentation by Human and Automated Means," *Computational Linguistics*, Vol. 23, No. 1, pp. 103-139, 1997.
- (21) Diane J. Litman, "Cue Phrase Classification Using Machine Learning," *Journal of Artificial Intelligence Research*, Vol. 5, pp. 53-94, 1996.
- (22) Premkumar T. Devanbu and Diane J. Litman, "Taxonomic Plan Reasoning," *Artificial Intelligence*, Vol. 84, pp. 1-35, 1996.
- (23) Julia Hirschberg and Diane Litman, "Empirical Studies on the Disambiguation of Cue Phrases," *Computational Linguistics*, Vol. 19, No. 3, pp. 501-530, 1993.
- (24) Bradley A. Goodman and Diane J. Litman, "On the Interaction Between Plan Recognition and Intelligent Interfaces," *User Modeling and User-Adapted Interaction*, Vol. 2, No. 1-2, pp. 83-115, 1992.
- (25) Diane J. Litman and James F. Allen, "A Plan Recognition Model for Subdialogues in Conversation," *Cognitive Science*, Vol. 11, No. 2, pp. 163-200, 1987.
- (26) James F. Allen and Diane J. Litman, "Plans, Goals, and Language," *Proceedings of the IEEE*, Vol. 74, No. 7, pp. 939-947, 1986.

Book Articles

- (1) Diane Litman and Kate Forbes-Riley, "Towards Improving (Meta)cognition by Adapting to Student Uncertainty in Tutorial Dialogue," *International Handbook of Metacognition and Learning Technologies*, Roger Azevedo and Vincent Aleven (eds.), Springer, to appear.
- (2) Kate Forbes-Riley, Diane Litman, and Heather Friedberg, "Annotating Disengagement for Spoken Dialogue Computer Tutoring," *Affective Prospecting, Explorations in the Learning Sciences*,

Instructional Systems and Performance Technologies 3, Rafael A. Calvo and Sidney D'Mello (eds.), Springer, in press.

- (3) Diane Litman, "Speech and Language Processing for Adaptive Training," *Adaptive Technologies for Training and Education*, Paula Durlach and Alan Lesgold (eds.), Cambridge University Press, in press.
- (4) Kate Forbes-Riley and Diane J. Litman, "Analyzing Dependencies Between Student Certainty States and Tutor Responses in a Spoken Dialogue Corpus," *Recent Trends in Discourse and Dialogue*, Laila Dybkjaer and Wolfgang Minker (eds.), Springer, pp. 275-304, 2008.
- (5) Veselin Stoyanov, Claire Cardie, Diane Litman, and Janyce Wiebe, "Evaluating an Opinion Annotation Scheme Using a New Multi-Perspective Question and Answer Corpus," *Computing Attitude and Affect in Text*, James G. Shanahan, Yan Qu, and Janyce Wiebe (eds.), Springer, Dordrecht, The Netherlands, 2005.
- (6) Claire Cardie, Janyce Wiebe, Theresa Wilson, and Diane Litman, "Low-Level Annotations and Summary Representations of Opinions for Multiperspective QA," *New Directions in Question Answering*, M. Maybury (ed.), MIT Press, pp. 87-98, 2004.
- (7) Amal Ahmed, Diane Litman, Anil Mishra, Peter F. Patel-Schneider, and Johannes P. Ros, "Using Affective Relations and Data-Driven Rules in Modeling Collections of Changing Interdependent Objects," *Implementing Application Frameworks: Object Oriented Frameworks at Work*, Mohamed Fayad, Douglas Schmidt, and Ralph Johnson (eds.), Wiley, 2000.
- (8) Rebecca J. Passonneau and Diane J. Litman, "Empirical Analysis of Three Dimensions of Spoken Discourse: Segmentation, Coherence and Linguistic Devices," *Computational and Conversational Discourse: Burning Issues - An Interdisciplinary Account*, E. Hovy and D. Scott (eds.), Springer-Verlag, Heidelberg, Germany, pp. 161-194, 1996.
- (9) Steven K. Feiner, Diane J. Litman, Kathleen R. McKeown, and Rebecca J. Passonneau, "Towards Coordinated Temporal Multimedia Presentations," *Intelligent Multimedia Interfaces*, M. Maybury (ed.), MIT Press, Cambridge, MA, pp. 139-147, 1993.
- (10) Diane J. Litman and James F. Allen, "Discourse Processing and Commonsense Plans," *Intentions in Communication*, P. Cohen, J. Morgan, and M. Pollack (eds.), MIT Press, Cambridge, MA, pp. 365-388, 1990.

Patents

- (1) Allen Gorin, Irene Geary, Diane Litman, Marilyn Walker, and Jeremy Wright, "Method and system for predicting problematic situations in a automated dialog," Patent 7158935, issued January 2, 2007.
- (2) Allen Gorin, Irene Langkilde Geary, Diane Litman, Marilyn Walker, and Jeremy Wright, "Method and System for Predicting Problematic Dialog Situations in a Task Classification System," Patent 6941266, issued September 6, 2005.
- (3) James Crawford, Daniel Dvorak, Diane Litman, Anil Mishra, and Peter Patel-Schneider, "Integrating Rules into Object-Oriented Programming Systems," Patent 5768480, issued June 16, 1998.

Conference Proceedings

- (1) Kate Forbes-Riley and Diane Litman, "When Does Disengagement Correlate with Learning in Spoken Dialog Computer Tutoring?," *Proceedings 15th International Conference on Artificial Intelligence in Education (AIED)*, Auckland, NZ, June-July 2011.
- (2) Kate Forbes-Riley and Diane Litman, "Using Performance Trajectories to Analyze the Immediate Impact of User State Misclassification in an Adaptive Spoken Dialogue System," *Proceedings 12th Annual SIGdial Meeting on Discourse and Dialogue (SIGdial)*, Portland, OR, June 2011.
- (3) Michael Lipschultz, Diane Litman, Pamela Jordan and Sandra Katz, "Predicting Changes in Level of Abstraction in Tutor Responses to Students," *Proceedings 24th International FLAIRS (Florida*

Artificial Intelligence Research Society) Conference, Palm Beach, Florida, May 2011.

- (4) Arthur Ward and Diane Litman, "Adding Abstractive Reflection to a Tutorial Dialog System," *Proceedings 24th International FLAIRS (Florida Artificial Intelligence Research Society) Conference*, Palm Beach, Florida, May 2011.
- (5) Min Chi, Kurt VanLehn and Diane Litman, "The More the Merrier? Examining Three Interaction Hypotheses," *Proceedings of the Annual Meeting of the Cognitive Science Society (CogSci)*, Portland, OR, August 2010.
- (6) Wenting Xiong, Diane Litman and Christian Schunn, "Assessing Reviewers' Performance Based on Mining Problem Localization in Peer-Review Data," *Proceedings Third International Conference on Educational Data Mining (EDM)*, pp. 211-220, Pittsburgh, PA, June 2010.
- (7) Kate Forbes-Riley and Diane Litman, "Metacognition and Learning in Spoken Dialogue Computer Tutoring," *Proceedings 10th International Conference on Intelligent Tutoring Systems (ITS)*, pp. 379-388, Pittsburgh, PA, June 2010.
- (8) Min Chi, Kurt VanLehn and Diane Litman, "Do Micro-Level Tutorial Decisions Matter: Applying Reinforcement Learning To Induce Pedagogical Tutorial Tactics," *Proceedings 10th International Conference on Intelligent Tutoring Systems (ITS)*, pp. 224-234, Pittsburgh, PA, June 2010. (Best Paper Award)
- (9) Min Chi, Kurt VanLehn, Diane Litman, and Pamela Jordan, "Inducing Effective Pedagogical Strategies Using Learning Context Features," *Proceedings Eighteenth International Conference on User Modeling, Adaptation, and Personalization (UMAP)*, Big Island, Hawaii, June 2010. (Best Student Paper Award)
- (10) Mihai Rotaru and Diane J. Litman, "Discourse Structure and Performance Analysis: Beyond the Correlation," *Proceedings 10th Annual Meeting of the Special Interest Group on Discourse and Dialogue (SIGDIAL)*, pp. 178-187, London, UK, September 2009.
- (11) Diane Litman, Mihai Rotaru, and Greg Nicholas, "Classifying Turn-Level Uncertainty Using Word-Level Prosody," *Proceedings 10th Annual Conference of the International Speech Communication Association (Interspeech)*, Brighton, UK, September 2009.
- (12) Kate Forbes-Riley and Diane Litman, "A User Modeling-based Performance Analysis of a Wizarded Uncertainty-Adaptive Dialogue System Corpus," *Proceedings 10th Annual Conference of the International Speech Communication Association (Interspeech)*, Brighton, UK, September 2009.
- (13) Hua Ai and Diane Litman, "Setting Up User Action Probabilities in User Simulations for Dialog System Development," *Proceedings Joint conference of the 47th Annual Meeting of the Association for Computational Linguistics and the 4th International Joint Conference on Natural Language Processing of the Asian Federation of Natural Language Processing (ACL-IJCNLP)*, pp. 888-896, Suntec, Singapore, August 2009.
- (14) Kate Forbes-Riley and Diane Litman, "Adapting to Student Uncertainty Improves Tutoring Dialogues," *Proceedings 14th International Conference on Artificial Intelligence in Education (AIED)*, pp. 33-40, Brighton, UK, July 2009.
- (15) Diane Litman, Johanna Moore, Myroslava O. Dzikovska and Elaine Farrow, "Using Natural Language Processing to Analyze Tutorial Dialogue Corpora Across Domains and Modalities," *Proceedings 14th International Conference on Artificial Intelligence in Education (AIED)*, Brighton, UK, July 2009.
- (16) Pamela Jordan, Diane Litman, Michael Lipschultz and Joanna Drummond, "Evidence of Misunderstandings in Tutorial Dialogue and their Impact on Learning," *Proceedings 14th International Conference on Artificial Intelligence in Education (AIED)*, Brighton, UK, July 2009.
- (17) Min Chi, Pamela Jordan, Kurt VanLehn and Diane Litman, "To Elicit Or To Tell: Does It Matter?", *Proceedings 14th International Conference on Artificial Intelligence in Education (AIED)*, Brighton, UK, July 2009.

- (18) Kate Forbes-Riley, Diane Litman, and Mihai Rotaru, "Responding to Student Uncertainty during Computer Tutoring: An Experimental Evaluation," *Proceedings 9th International Conference on Intelligent Tutoring Systems (ITS)*, pp. 60-69, Montreal, Canada, June 2008.
- (19) Arthur Ward and Diane Litman, "Semantic Cohesion and Learning," *Proceedings 9th International Conference on Intelligent Tutoring Systems (ITS)*, Montreal, Canada, June 2008.
- (20) Hua Ai and Diane J. Litman, "Assessing Dialog System User Simulation Evaluation Measures Using Human Judges," *Proceedings 46th Annual Meeting of the Association for Computational Linguistics: Human Language Technologies (ACL)*, Columbus, OH, June 2008.
- (21) Kate Forbes-Riley, Diane Litman, Scott Silliman and Amruta Purandare, "Uncertainty Corpus: Resource to Study User Affect in Complex Spoken Dialogue Systems," *Proceedings 6th Language Resources and Evaluation Conference (LREC)*, pp. 513-517, Marrakech, Morocco, May-June 2008.
- (22) Amruta Purandare and Diane Litman, "Analyzing Dialog Coherence using Transition Patterns in Lexical and Semantic Features," *Proceedings 21st International FLAIRS (Florida Artificial Intelligence Research Society) Conference*, Coconut Grove, Florida, May 2008.
- (23) Amruta Purandare and Diane Litman, "Content-Learning Correlations in Spoken Tutoring Dialogs at Word, Turn and Discourse Levels," *Proceedings 21st International FLAIRS (Florida Artificial Intelligence Research Society) Conference*, Coconut Grove, Florida, May 2008.
- (24) Kate Forbes-Riley and Diane Litman, "Investigating Human Tutor Responses to Student Uncertainty for Adaptive System Development," *Proceedings Affective Computing and Intelligent Interaction (ACII)*, pp. 678-689, Lisbon, Portugal, September 2007.
- (25) Hua Ai and Diane J. Litman, "Knowledge Consistent User Simulations for Dialog Systems," *Proceedings Interspeech*, Antwerp, Belgium, August 2007.
- (26) Mihai Rotaru and Diane Litman, "The Utility of a Graphical Representation of Discourse Structure in Spoken Dialogue Systems," *Proceedings 45th Annual Meeting of the Association for Computational Linguistics (ACL)*, pp. 360-367, Prague, Czech Republic, June 2007.
- (27) Arthur Ward and Diane Litman. "Dialog Convergence and Learning," *Proceedings 13th International Conference on Artificial Intelligence in Education (AIED)*, Los Angeles, CA, July 2007.
- (28) Kate Forbes-Riley, Diane Litman, Amruta Purandare, Mihai Rotaru, Joel Tetreault. "Comparing Linguistic Features for Modeling Learning in Computer Dialogue Tutoring," *Proceedings 13th International Conference on Artificial Intelligence in Education (AIED)*, Los Angeles, CA, July 2007.
- (29) Joel R. Tetreault, Dan Bohus, and Diane J. Litman. "Estimating the Reliability of MDP Policies: A Confidence Interval Approach," *Proceedings Human Language Technologies: The Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL-HLT)*, Rochester, NY, April 2007.
- (30) Mihai Rotaru and Diane J. Litman. "Discourse Structure and Speech Recognition Problems," *Proceedings of Interspeech*, pp. 53-56, Pittsburgh, PA, September 2006.
- (31) Hua Ai, Diane J. Litman, Kate Forbes-Riley, Mihai Rotaru, Joel Tetreault, and Amruta Purandare. "Using System and User Performance Features to Improve Emotion Detection in Spoken Tutoring Dialogs," *Proceedings of Interspeech*, pp.797-800, Pittsburgh, PA, September 2006.
- (32) Rohit Kumar, Carolyn P. Rose, and Diane J. Litman. "Identification of Confusion and Surprise in Spoken Dialog using Prosodic Features," *Proceedings of Interspeech*, pp. 1842-1845, Pittsburgh, PA, September 2006.
- (33) Amruta Purandare and Diane Litman. "Humor: Prosody Analysis and Automatic Recognition for FRIENDS," *Proceedings Conference on Empirical Methods in Natural Language Processing (EMNLP)*, Sydney, Australia, July 2006.

- (34) Mihai Rotaru and Diane J. Litman. "Exploiting Discourse Structure for Spoken Dialogue Performance Analysis," *Proceedings Conference on Empirical Methods in Natural Language Processing (EMNLP)*, Sydney, Australia, July 2006.
- (35) Mihai Rotaru and Diane J. Litman. "Dependencies between Student State and Speech Recognition Problems in Spoken Tutoring Dialogues," *Proceedings Joint Conference of the International Committee on Computational Linguistics and the Association for Computational Linguistics (Coling/ACL)*, Sydney, Australia, July 2006.
- (36) Joel R. Tetreault and Diane J. Litman. "Comparing the Utility of State Features in Spoken Dialogue Using Reinforcement Learning," *Human Language Technology Conference/North American Chapter of the Association for Computational Linguistics Annual Meeting (HLT-NAACL)*, New York, NY, June 2006.
- (37) Kate Forbes-Riley and Diane J. Litman. "Modelling User Satisfaction and Student Learning in a Spoken Dialogue Tutoring System with Generic, Tutoring, and User Affect Parameters," *Human Language Technology Conference/North American Chapter of the Association for Computational Linguistics Annual Meeting (HLT-NAACL)*, New York, NY, June 2006.
- (38) Kate Forbes-Riley, Diane Litman, Scott Silliman, and Joel Tetreault. "Comparing Synthesized versus Pre-recorded Tutor Speech in an Intelligent Tutoring Spoken Dialogue System," *19th International FLAIRS (Florida Artificial Intelligence Research Society) Conference*, Melbourne Beach, FL, May 2006.
- (39) Arthur Ward and Diane Litman. "Cohesion and Learning in a Tutorial Spoken Dialog System," *19th International FLAIRS (Florida Artificial Intelligence Research Society) Conference*, pp. 533-538, Melbourne Beach, FL, May 2006.
- (40) Joel Tetreault and Diane Litman, "Using Reinforcement Learning to Build a Better Model of Dialogue State", *11th Conference of the European Chapter of the Association for Computational Linguistics (EACL)*, pp. 289-296, Trento, Italy, April 2006.
- (41) Mihai Rotaru and Diane J. Litman, "Using Word-level Pitch Features to Better Predict Student Emotions during Spoken Tutoring Dialogues," *9th European Conference on Speech Communication and Technology (Interspeech-2005/Eurospeech)*, Lisbon, Portugal, September 2005.
- (42) Diane Litman and Kate Forbes-Riley, "Speech Recognition Performance and Learning in Spoken Dialogue Tutoring," *9th European Conference on Speech Communication and Technology (Interspeech-2005/Eurospeech)*, Lisbon, Portugal, September 2005.
- (43) Kate Forbes-Riley and Diane Litman, "Correlating Student Acoustic-Prosodic Profiles with Student Learning in Spoken Tutoring Dialogues," *9th European Conference on Speech Communication and Technology (Interspeech-2005/Eurospeech)*, Lisbon, Portugal, September 2005.
- (44) Mihai Rotaru, Diane J. Litman, and Katherine Forbes-Riley, "Interactions between Speech Recognition Problems and User Emotions," *9th European Conference on Speech Communication and Technology (Interspeech-2005/Eurospeech)*, Lisbon, Portugal, September 2005.
- (45) Kate Forbes-Riley, Diane Litman, Alison Huettner, and Arthur Ward, "Dialogue-Learning Correlations in Spoken Dialogue Tutoring," *Proceedings of the 12th International Conference on Artificial Intelligence in Education (AIED-2005)*, Amsterdam, Netherlands, July 2005.
- (46) Diane J. Litman, Carolyn P. Rose, Kate Forbes-Riley, Kurt VanLehn, Dumisizwe Bhembe, and Scott Silliman, "Spoken Versus Typed Human and Computer Dialogue Tutoring," *Proceedings of the Seventh International Conference on Intelligent Tutoring Systems (ITS-2004)*, pp. 368-379, Maceio, Brazil, August-September 2004.
- (47) Diane J. Litman and Kate Forbes-Riley, "Predicting Student Emotions in Computer-Human Tutoring Dialogues," *Proceedings of the 42nd Annual Meeting of the Association for Computational Linguistics (ACL-2004)*, pp. 352-359, Barcelona, Spain, July 2004.

- (48) Kate Forbes-Riley and Diane Litman, "Predicting Emotion in Spoken Dialogue from Multiple Knowledge Sources," *Proceedings of the Human Language Technology Conference: 4th Meeting of the North American Chapter of the Association for Computational Linguistics (HLT/NAACL-2004)*, pp. 201-208, Boston, MA, May 2004.
- (49) Mihai Rotaru and Diane J. Litman, "Exceptionality and Natural Language Learning," *Proceedings of the Seventh Conference on Natural Language Learning (CONLL-2003)*, pp. 63-70, Edmonton, Canada, May 2003.
- (50) Michael Kearns, Charles Isbell, Satinder Singh, Diane Litman, and Jessica Howe, "CobotDS: A Spoken Dialogue System for Chat," *Proceedings of the Eighteenth National Conference on Artificial Intelligence (AAAI-2002)*, pp. 425-430, Edmonton, Canada, July-August 2002.
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INVITED TALKS

"Let's Play Jeopardy! Insights into Deep A&A and Natural Language," Panelist, IBM Watson Presentation, Demonstration and Q&A Panel, Carnegie Mellon University, Pittsburgh, PA, March 2011.

"Natural Language Processing in the World of Business, Law, and Medicine," Panelist, Symposium on Innovative Watson Technologies University of Pittsburgh, Pittsburgh, PA, March 2011.

"The Good, the Bad, and the Future," Panelist, ITS Workshop on Computer-Supported Peer Review in Education, Pittsburgh, PA, June 2010.

"Spoken Dialogue Systems and the Learning Sciences," University of Pennsylvania, Philadelphia, PA, January 2010.

"Adapting to User Affect in a Spoken Dialogue System," Columbia University, New York, NY, January 2010.

"Rethinking Education in the Age of Technology," panelist, Learning Policy Center Colloquium Series, Pittsburgh, PA, October 2009.

"The Evolution of AIED: Successes and Challenges," panelist, 14th International Conference on Artificial Intelligence in Education, Brighton, UK, July 2009.

"Speech and Language Processing for Adaptive Training," Army Research Institute Workshop on Adaptive Training Technologies, Charleston, SC, March 2009.

"Spoken Tutorial Dialogue Systems: Opportunities, Challenges, and Results," University of Pittsburgh, Pittsburgh, PA, January 2009.

"User Simulation for Spoken Dialogue Systems," University of Ulster, Belfast, Northern Ireland, April 2008.

"Detecting and Adapting to Student Uncertainty in a Spoken Tutorial Dialogue System," Affective Language in Human and Machine Symposium of the AISB Convention, Aberdeen, Scotland, April 2008.

"Applications of Discourse Structure for Spoken Dialogue Systems," Cambridge University, Cambridge, England, February 2008.

"Spoken Dialogue for Intelligent Tutoring Systems: Opportunities and Challenges," Dublin City University, Dublin, Ireland, February 2008.

"Spoken Dialogue for Intelligent Tutoring Systems: Opportunities and Challenges," Distinguished Lecture Series at the University of Edinburgh, Edinburgh, Scotland, February 2008.

"Spoken Dialogue for Intelligent Tutoring Systems: Opportunities and Challenges," The Open University, Milton-Keynes, England, January 2008.

"Spoken Dialogue for Intelligent Tutoring Systems: Opportunities and Challenges," Bogazici University, Istanbul, Turkey, December 2007.

"Spoken Dialogue for Intelligent Tutoring Systems: Opportunities and Challenges," University of Aberdeen, Aberdeen, Scotland, December 2007.

"Spoken Dialogue for Intelligent Tutoring Systems: Opportunities and Challenges," The University of Sheffield, Sheffield, England, November 2007.

"Spoken Dialogue for Intelligent Tutoring Systems: Opportunities and Challenges," Oxford University, Oxford, England, November 2007.

"Applications of Discourse Structure for Spoken Dialogue Systems," University of Edinburgh, Edinburgh, Scotland, November 2007.

"Spoken Dialogue for Intelligent Tutoring Systems: Opportunities and Challenges," University of York, York, England, October 2007.

"Cohesion in Tutorial Dialogue and its Impact on Learning" (with Sandra Katz), Office of Naval Research Cognitive Science and Technology Research Program Review, Arlington, VA, October 2007.

"Spoken Dialogue for Intelligent Tutoring Systems: Opportunities and Challenges," University of Geneva, Geneva, Switzerland, April 2007.

"Finding Academic Year Funding," CRA-W Graduate Cohort Workshop, San Francisco, CA, March 2007.

"Detecting User Emotions in Spoken Dialogue Systems," Bosch Research and Technology Center North America, Pittsburgh, PA, November 2006.

"Discourse and Dialogue Processing in Spoken Intelligent Tutoring Systems," DFG/ESRC Summer School in Computational Linguistics and Psycholinguistics of the International Graduate College (IGK), Edinburgh, September 2006.

"Discourse and Dialogue Processing in Spoken Intelligent Tutoring Systems," 7th SIGdial Workshop on Discourse and Dialogue, Sydney, Australia, July 2006.

"Learning Optimal Strategies for Spoken Dialogue Systems," Presenter at ACL/HCSNet Advanced Program in Natural Language Processing (Discourse and Dialogue Theme), Melbourne, Australia, July 2006.

"Spoken Dialogue Systems," Lecturer at 1st International PhD School in Language and Speech Technologies, Tarragona, Spain, June 2006.

"Spoken Dialogue for Intelligent Tutoring Systems: Opportunities and Challenges," Keynote Speaker at Human Language Technology Conference/North American chapter of the Association for Computational Linguistics Annual Meeting, New York, New York, June 2006.

"Optimizing Dialogue Management in an Intelligent Tutoring Spoken Dialogue System," University of Texas El Paso, El Paso, TX, April 2006.

"Speech and Affect in Intelligent Tutoring Dialogue Systems," University of Illinois, Urbana, IL, May 2005.

"Correlations with Learning in Spoken Tutoring Dialogues," Talk and Dialogue: How Discourse Patterns Support Learning (A Festschrift for Lauren Resnick), Pittsburgh, PA, May 2005.

"Learning, Dialogue, Speech Recognition and Text-to-Speech in Spoken Dialogue Tutoring," Office of Naval Research Tutorial Discourse Meeting, Orlando, FL, March 2005.

"Using Prosody to Recognize Student Emotions and Attitudes in Spoken Tutoring Dialogues," Workshop on Analysis and Generation of Prosody, Tilburg University, The Netherlands, December 2004.

"Adaptive Systems and Computational Linguistics," Unilever Change Behaviour Through Automated Dialogue Workshop, Boston, MA, November 2004.

"Experiments with ITSPOKE: An Intelligent Tutoring Spoken Dialogue System," Educational Testing Services, Princeton, NJ, November 2004.

"Experiments with ITSPOKE: An Intelligent Tutoring Spoken Dialogue System," Department of Information Science and Telecommunications, University of Pittsburgh, Pittsburgh, PA, October 2004.

"Spoken Dialogue in Human and Computer Tutoring," Office of Naval Research Tutorial Discourse Meeting, Memphis, TN, May 2004.

"'I Already Told You That': Automatic Detection of Negative Student States in Spoken Tutoring Dialogues," Microsoft Research, Redmond, WA, November 2003.

"Designing and Evaluating Two Adaptive Spoken Dialogue Systems," General Motors, Warren, MI, May 2003.

"Designing and Evaluating Two Adaptive Spoken Dialogue Systems," University of Delaware, Newark, DE, October 2002.

"Learning, Adaptation, and Personalization in Spoken Dialogue Systems," Carnegie Mellon University, Pittsburgh, PA, March 2002.

"Optimizing Spoken Dialogue Management with Reinforcement Learning," University of Essex, Colchester, United Kingdom, January 2002.

"Looking Back 25 Years from Now: Key Developments in Conversational Systems," panelist, NAACL

Workshop on Adaptation in Dialogue Systems, Pittsburgh, PA, June 2001.

"Misrecognitions, Corrections and Prosody in Spoken Dialogue Systems," University of Helsinki, Helsinki, Finland, April 2001.

"Optimizing Dialogue Management with Reinforcement Learning: Experiments with the NJFun Spoken Dialogue System," Helsinki University of Technology, Espoo, Finland, April 2001.

"Optimizing Dialogue Management with Reinforcement Learning: Experiments with the NJFun Spoken Dialogue System," University of Pittsburgh, Pittsburgh, PA, February 2001.

"Misrecognitions, Corrections and Prosody in Spoken Dialogue Systems," University of Maryland, College Park, MD, November 2000.

"Empirical Evaluation of a Reinforcement Learning Spoken Dialogue System," Naval Research Laboratory, Washington, DC, November 2000.

"Empirical Evaluation of a Reinforcement Learning Spoken Dialogue System," University of Antwerp, Antwerp, Belgium, October 2000.

"Misrecognitions and Corrections in Spoken Dialogue Systems," Carnegie Mellon University, Pittsburgh, PA, July 2000.

"Personalizing Spoken Dialogue Agents," Bell Labs, Lucent Technologies, Murray Hill, NJ, March 1999.

"Evaluation of Dialogue Systems," Third International Workshop for Discourse Research Initiative, Chiba University, Japan, May 1998.

"Predicting Speech Recognition Performance from Dialogue Phenomena," AAAI Spring Symposium Series, Palo Alto, CA, March 1998.

"Evaluating Spoken Dialogue Agents," University of Maryland, College Park, MD, September 1997.

"Discourse Analysis Using Machine Learning," University of Illinois, Chicago, IL, April 1996.

"Discourse Analysis Using Machine Learning," University of Delaware, Newark, DE, February 1995.

"Cue Word Classification: Empirical Studies and a Machine Learning Approach," University of New Hampshire, Durham, NH, October 1994.

"The R++ Language for Rules in C++" (with D. Dvorak, A. Mishra), AT&T NJ/NY Technology Day, Middletown, NJ, May 1994.

"Knowledge Representation," AT&T Operations Technology Center, Middletown, NJ, 1993.

"Network Monitoring and Diagnosis Using a Model of Structure and Function," AT&T Switching Systems Technology Transfer Symposium, Naperville, Illinois, December 1993.

"Outlook: The View from Analysis," ACL Workshop on Intentionality and Structure in Discourse Relations, Columbus, Ohio, June 1993.

"Plan-Based Artificial Intelligence," NCR, Atlanta, Georgia, March 1993.

"Discourse Segment Recognition," University of Rochester, Rochester, NY, February 1993.

"Terminological Reasoning with Plans and an Application to Plan Recognition," AT&T Bell Laboratories, Naperville, Illinois, November 1992.

"Towards Automated Discourse Segmentation," Washington University, St. Louis, Missouri, October 1992.

"Plan-Based Terminological Representation and Reasoning," IBM Thomas J. Watson Research Center, Yorktown Heights, NY, June 1992.

"Plan-Based Terminological Representation and Reasoning," GE Research and Development Center, Schenectady, NY, March 1991.

"Disambiguating Cue Phrases in Text and Speech," University of Rochester, Rochester, NY, October 1990.

"Plan Recognition, Interfaces, and Design: A Case Study," University of Waterloo, Waterloo, Ontario, Canada, May 1989.

"Identifying Cue Phrases Intonationally" (with J. Hirschberg), University of Pittsburgh, Pittsburgh, PA, January 1989.

"Identifying Cue Phrases Intonationally," New York University, New York, NY, November 1988.

"Identifying Cue Phrases Intonationally," University of Illinois, Urbana, IL, October 1987.

"Recognizing and Relating Discourse Interactions and Task-Oriented Plans," Symposium on Intentions and Plans in Communication and Discourse, Monterey, CA, March 1987.

"Plan Recognition and Discourse Analysis: An Integrated Approach for Understanding Dialogues," University of Pennsylvania, Philadelphia, PA, March 1986.

"Plan Recognition and Discourse Analysis: An Integrated Approach for Understanding Dialogues," University of Toronto, Toronto, Ontario, Canada, 1985.

IN THE PRESS

"Teaching Computers to Teach Like Humans: Pitt researchers developing natural language tutors" (by Chris Zurawsky), *Pitt Chronicle*, June 7, 2004.

"Fancy Footwork" (by Ron Copeland), *Information Week*, October 9, 2000 (Issue 807).

PROFESSIONAL ACTIVITIES

Editorial Positions

Book Review Editor, *User Modeling and User Adapted Interaction*, 1993-2003

Editorial Board, *Computational Linguistics*, 1991-1993

Program and Conference Committees (as Chair, Organizer, or Senior Member)

Senior Program Committee, International Conference on Affective Computing and Intelligent Interaction (ACII), 2011,

Senior Program Committee, 10th International Conference on Intelligent Tutoring Systems (ITS), 2010

Student Research Workshop Faculty Co-Advisor, Human Language Technologies: The 11th Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL HLT), 2010

Program Committee Senior Member, International Conference of Artificial Intelligence in Education (AIED), 2009, 2011

Organizing Committee, 9th International Conference on Speech and Language Processing (INTER-SPEECH - ICSLP), 2006

Co-Chair, Prosody in Speech Recognition and Understanding (International Speech Communication Association (ISCA) Tutorial and Research Workshop Series), 2001

Area Chair, Discourse, Dialogue and Pragmatics (1st Annual Meeting of the North American Chapter of the ACL (NAACL)), 2000

Co-Chair, Dialogue Management in Interactive Spoken Dialogue Systems (37th Annual Meeting of the Association for Computational Linguistics (ACL), Thematic Session), 1999

Co-Chair, The Next Generation of Plan Recognition Systems: Challenges for and Insight from Related Areas of AI (14th International Joint Conference on Artificial Intelligence (IJCAI), Workshop Series), 1995

Co-Chair, International Conference on User Modeling (UM), 1994

Co-Chair, Discourse Structure in Natural Language Understanding and Generation (American Association for Artificial Intelligence Fall Symposium Series), 1991

Program Committees (as Member)

National Conference on Artificial Intelligence (AAAI), 1994, 1996, 1998, 1999, 2000

International Conference on Affective Computing and Intelligent Interaction (ACII), 2007, 2009

Annual Meeting of the Association for Computational Linguistics (ACL), 1991, 1993, 2001, 2002, 2004, 2005, 2007, 2008, 2009, 2010, 2011

Conference on Artificial Intelligence in Education (AIED), 2007

Conference on Natural Language Learning (CoNLL), 2002, 2003, 2004, 2005, 2008

Conference on Empirical Methods in Natural Language Processing (EMNLP), 2003

Meeting of the European Chapter of the Association for Computational Linguistics (EACL), 2006.

European Conference on Speech Communication and Technology (Eurospeech), 2001

Innovative Applications of Artificial Intelligence Conference (IAAI), 2004, 2005

International Joint Conference on Artificial Intelligence (IJCAI), 2005

Annual Conference of the International Speech Communication Association (INTERSPEECH), 2011

Language Resources and Evaluation Conference (LREC), 2008

Annual Meeting of the North American Chapter of the ACL (NAACL), 2001, 2003, 2004, 2010

International Conference on User Modeling (UM), 1992, 1996, 1997, 1999, 2001, 2003, 2005, 2007

SIGdial Workshop (now Conference) on Discourse and Dialogue, 2001, 2008, 2009, 2010, 2011

Paralinguistic Speech - between models and data (ParaLing), 2007

SLaTE Workshop on Speech and Language Technology in Education (SLaTE), 2007, 2009, 2011

Grace Hopper Celebration of Women in Computing, 2007

Modeling and Scaffolding Affective Experiences To Impact Learning (AIED Workshop Series), 2007

First International Workshop on Spoken Language Technology (SLT), 2006

Innovative Use of NLP for Building Educational Applications (HLT-NAACL and ACL Workshops), 2003, 2005, 2009, 2010, 2011

Knowledge and Reasoning in Practical Dialogue Systems (IJCAI Workshop Series), 1999, 2001, 2005

Adaptation to Affective Factors (UM Workshop Series), 2005

Dialog-based Intelligent Tutoring Systems: State of the art and new research directions (ITS Workshop Series), 2004

Analyzing Student-Tutor Interaction Logs to Improve Educational Outcomes (ITS Workshop Series), 2004

ISCA Workshop on Error Handling in Spoken Dialogue Systems, 2003

Effective Tools and Methodologies for Teaching Natural Language Processing and Computational Linguistics (ACL Workshop Series), 2002

Empirical Methods for Tutorial Dialogue Systems (ITS Workshop Series), 2002

Adaptation in Dialogue Systems (NAACL Workshop Series), 2001

Machine Learning and Statistical NLP for Dialogue (ACL Thematic Session), 2000

Workshop on the Semantics and Pragmatics of Dialogue, 2000, 2009

Towards Standards and Tools for Discourse Tagging (ACL Workshop Series), 1999

Applying Machine Learning to Discourse Processing (American Association for Artificial Intelligence Spring Symposium Series), 1998

Offices

Advisory Board, DialRC (NSF Dialog Research Center at Carnegie Mellon), 2011-present

Scientific Committee, The International Speech Communication Association Special Interest Group on Speech and Language Technology in Education (SLaTE), 2006-present

Past Chair, North American Chapter of the Association for Computational Linguistics (NAACL), 2004-2005

Chair (elected), North American Chapter of the Association for Computational Linguistics (NAACL), 2000-2001, 2002-2003

Executive Committee, Association for Computational Linguistics (ACL), 2000-2001, 2002-2003

International Advisory Committee, ACL Special Interest Group on Natural Language Learning (SIGNLL), 2002-present

Science Advisory Committee (elected), ACL Special Interest Group on Dialogue and Discourse (SIGdial), 1999-2001

AAAI Liason, ACL Special Interest Group on Dialogue And Discourse (SIGdial), 1999-2001

User Modeling Inc., Advisory Board 2001-present, Director-at-large 2000-2001, Vice-President 1996-1999, Treasurer 1994-1996

Reviewing

Reviewer for books, journals, and conferences in Artificial Intelligence and Natural Language Processing

National Science Foundation, Reviewer and Panelist, 1989-1994, 2000, 2002-2004, 2008, 2009, 2011

STUDENT ADVISING

Post Doctoral Students

Joel Tetreault, Learning Research and Development Center, University of Pittsburgh, Pittsburgh, PA, 2004-2007 (2005 PhD in Computer Science from University of Rochester; now at Educational Testing Service).

Katherine Forbes-Riley, Learning Research and Development Center, University of Pittsburgh, Pittsburgh, PA, 2003-2006 (2003 PhD in Linguistics from University of Pennsylvania; now a Research Associate at Learning Research and Development Center, University of Pittsburgh).

Ph.D. Students (graduated)

Arthur Ward, *Reflection and Learning Robustness in a Natural Language Conceptual Physics Tutoring System*, Intelligent Systems, University of Pittsburgh, Pittsburgh, PA, June 23, 2010. (Now a post-doc at DBMI, University of Pittsburgh.)

Min Chi, *Do Micro-Level Tutorial Decisions Matter: Applying Reinforcement Learning To Induce Pedagogical Tutorial Tactics*, Intelligent Systems, University of Pittsburgh, Pittsburgh, PA, November 20, 2009. (Now a post-doc at Stanford University.)

Hua Ai, *User Simulation for Spoken Dialog System Development*, Intelligent Systems, University of Pittsburgh, Pittsburgh, PA, September 21, 2009. (Now a research scientist at Georgia Tech.)

Mihai Rotaru, *Applications of Discourse Structure for Spoken Dialogue Systems*, Computer Science, University of Pittsburgh, Pittsburgh, PA, September 11, 2008. (Now a senior natural language engineer at Textkernel.)

Robert A. Weida, *Closed Terminologies and Temporal Reasoning in Description Logic for Concept and Plan Recognition*, Computer Science, Columbia University, New York, NY, March 19, 1996.

Ph.D. Students (current)

Michael Lipschultz, Computer Science, University of Pittsburgh, Pittsburgh, PA, post-comps.

Wenting Xiong, Computer Science, University of Pittsburgh, Pittsburgh, PA, post-prelims.

Ph.D. Thesis Committees

Michael Heilman, *Automatic Factual Question Generation for Reading Assessment*, Language Technologies Institute, Carnegie Mellon University, Pittsburgh, PA, March 23, 2011.

Swapna Somasundaran, *Discourse-level Relations for Opinion Analysis*, Computer Science Department, University of Pittsburgh, Pittsburgh, PA, March 24, 2010.

Antoine Raux, *Flexible Turn-Taking for Spoken Dialog Systems*, Language Technologies Institute, Carnegie Mellon University, Pittsburgh, PA, December 12, 2008.

Theresa Wilson, *Fine-grained Subjectivity and Sentiment Analysis: Recognizing the intensity, polarity, and attitudes of private states*, Intelligent Systems Program, University of Pittsburgh, Pittsburgh, PA, May 4, 2007.

Maria Georgescu, *Automatic Structuring of Dialogs: the Problem of Topic Segmentation*, University of Geneva, Geneva, Switzerland, April 2, 2007.

Piroska Lendvai, *Extracting Information from Spoken User Input*, Tilburg University, Netherlands, December 20, 2004.

H. Chad Lane, *Natural Language Tutoring and the Novice Programmer*, Computer Science, University of Pittsburgh, Pittsburgh, PA, September 8, 2004.

Amy Soller, *Computational Analysis of Knowledge Sharing in Collaborative Distance Learning*, Intelligent Systems, University of Pittsburgh, Pittsburgh, PA, August 30, 2002.

Jacques Robin, *Revision-Based Generation of Natural Language Summaries Providing Historical Background*, Computer Science, Columbia University, New York, NY, 1994.

B.L. Raskutti, *A Probabilistic Approach to Plan Recognition and Response Generation during Cooperative Consultations*, Monash University, Australia, 1993.

Doree Seligmann, *Interactive Intent-based Illustration: A Visual Language for 3D Worlds*, Computer Science, Columbia University, New York, NY, 1993.

Masters Students

Amruta Purandare, Intelligent Systems, University of Pittsburgh, Pittsburgh, PA, 2008.

Beatriz Maeireizo, *Applying Co-training for Predicting Student Emotions with Spoken Dialogue Data* (MS Project), Computer Science, University of Pittsburgh, Pittsburgh, PA, July 2005.

Lin Ma, *Predicting Medical Reasoning Codings in Pathology Protocols using Natural Language Features* (MS Project), Computer Science, University of Pittsburgh, Pittsburgh, PA, June 2003.

Masters Thesis and other Graduate Student Committees

Collin Lynch *The Diagnosticity of Argument Diagrams (PhD Thesis Proposal)*, Intelligent Systems Program, University of Pittsburgh, Pittsburgh, PA, April 11, 2011.

Matthias Grabmair, *Argumentation with Value Judgments (MS Project)*, Intelligent Systems Program, University of Pittsburgh, Pittsburgh, PA, February 4, 2011.

Wei Chen, *Detecting Children's Off-task Speech in Tutorial Dialogs by Learning from Imbalanced and Incomplete Data: a Practical Approach (PhD Thesis Proposal)*, Language Technologies Institute, Carnegie Mellon University, Pittsburgh, PA, February 2, 2011.

Michal Valko, *Adaptive Graph-Based Algorithms for Conditional Anomaly Detection (PhD Thesis Proposal)*, Computer Science Department, University of Pittsburgh, Pittsburgh, PA, December 20, 2010.

Frank Liberato, PhD Comprehensive, Computer Science, University of Pittsburgh, Pittsburgh, PA, July 23, 2010.

Neil McIntyre, *Learning to Tell Tales: Automatic Story Generation from Corpora (PhD Thesis Proposal)*, Informatics, University of Edinburgh, Edinburgh, Scotland, December 12, 2007.

Tomas Singliar, *Latent Space Approaches to Data Analysis (PhD Comprehensive)*, Computer Science, University of Pittsburgh, Pittsburgh, PA, February 5, 2007.

Chenhai Xi, *Language Modeling (PhD Comprehensive Exam)*, Computer Science, University of Pittsburgh, Pittsburgh, PA, November 2006.

Paul Hoffmann, *Annotating the Contextual Polarity of Subjective Expressions*, Intelligent Systems, University of Pittsburgh, Pittsburgh, PA, May 2006.

Ali Alanjawi, *Using Coevolution in Complex Domains (PhD Thesis Proposal)*, Computer Science, University of Pittsburgh, Pittsburgh, PA, February 20, 2006.

Behrang Mohit, *Syntax-Based Named Entity Extraction for English and Arabic*, Intelligent Systems, University of Pittsburgh, Pittsburgh, PA, January 2006.

Ilya Goldin, *Labeling, Defining, and Using: Automatic Detection of Discourse Structure in Student Essays*, Master's Project, Intelligent Systems, University of Pittsburgh, Pittsburgh, PA, August 2006.

Lin Ma, *Effective Computer Access with Plan-Based Intelligent Screen Reader*, Master's Thesis, Health and Rehabilitation Sciences, University of Pittsburgh, Pittsburgh, PA, December 9, 2003.

Ravi Desai, *Teaching with Dialectic Arguments vs. Didactic Explanations*, Intelligent Systems, University of Pittsburgh, Pittsburgh, PA, 2002.

Undergraduate Students

Joanna Drummond, Computer Science, University of Pittsburgh, Pittsburgh, PA, 2008-2011.

Heather Friedberg, Computer Science, University of Pittsburgh, Pittsburgh, PA, 2009-present.

Gregory Nicholas, Computer Science, University of Pittsburgh, Pittsburgh, PA, graduated 2007.

Nathan Ong, Computer Science, University of Pittsburgh, Pittsburgh, PA, 2010-present.

Supervised Employees

Scott Silliman, Programmer, LRDC, 2002-present.

Alison Huettner, Research Associate, LRDC, 2004.

Wade Emrick, Part-Time Transcriber, LRDC, 2004-2005.

Ryan Schultz, Undergraduate Transcriber, LRDC, 2002-2004.

TEACHING EXPERIENCE

Discrete Structures for Computer Science, Department of Computer Science, University of Pittsburgh, Spring 2005, Fall 2006, Spring 2007, Spring 2010 (CS 0441). Taught undergraduate course, using the textbook *Discrete Mathematics and Its Applications* by Kenneth Rosen.

Introduction to Artificial Intelligence, Department of Computer Science, University of Pittsburgh, Fall 2008 (CS1571). Taught undergraduate course, using the textbook *Artificial Intelligence: A Modern Approach* by Stuart Russell and Peter Norvig.

Artificial Intelligence Application Development, Department of Computer Science, University of Pittsburgh, Spring 2003 and 2004 (CS1573). Redesigned and taught undergraduate course.

Directed Study, Department of Computer Science, University of Pittsburgh, Spring 2011 (CS1950). Supervised CS major Capstone Experience requirement for Heather Friedberg and Gabriel deForest.

Foundations of Artificial Intelligence, Department of Computer Science / Intelligent Systems Program, University of Pittsburgh, Fall 2006, 2009, 2010 (CS2710/ISSP2160). Taught graduate course, using the textbook *Artificial Intelligence: A Modern Approach* by Stuart Russell and Peter Norvig.

Introduction to Natural Language Processing, Department of Computer Science / Intelligent Systems Program, University of Pittsburgh, Fall 2002, 2003, 2004, 2011 (CS2731/ISSP2230). Taught graduate course, using the textbook *Speech and Language Processing* by Daniel Jurafsky and James H. Martin.

Advanced Topics in Artificial Intelligence (Dialog Systems), Department of Computer Science / Intelligent Systems Program, University of Pittsburgh, Spring 2002 (CS3710/ISSP3565). Created and taught new graduate seminar course.

Advanced Topics in Artificial Intelligence (Affective Spoken Dialogue Systems), Department of Computer Science / Intelligent Systems Program, University of Pittsburgh, Spring 2006 (CS3710/ISSP3565). Created and taught new graduate seminar course.

Advanced Topics in Artificial Intelligence (Speech and Natural Language Processing for Educational Applications), Department of Computer Science / Intelligent Systems Program, University of Pittsburgh, Spring 2009 (CS3710/ISSP3565). Created and taught new graduate seminar course.

Natural Language Processing, Department of Computer Science / Intelligent Systems Program, University of Pittsburgh, Fall 2001 (CS3730/ISSP3120). Created and taught new graduate course, using the textbook *Speech and Language Processing* by Daniel Jurafsky and James H. Martin.

Research Experience/Computer Science, Department of Computer Science, University of Pittsburgh, Spring 2004, 2006, 2007, 2008, 2009, 2010, 2011 (CS 2002). Co-supervised exploratory research (related to a module covered in CS 2001 from the previous semester) for Beatriz Maeireizo, Swapna Somasundaran, Roxana Gheorghiu, Michael Lipschultz, Wenting Xiong, Adam Smith, Alex Conrad, Yingze Wang, Huy Nyugen.

Advanced Topics in Intelligent Systems, Intelligent Systems Program, University of Pittsburgh, Spring 2005 (ISSP 2030). Supervised exploratory research (related to a module covered in ISSP 2020 from the previous semester) for Hua Ai and Amruta Purandare.

Independent Study, Department of Computer Science and Intelligent Systems Program, University of Pittsburgh, 2002, 2003, 2004, 2005 (CS2990). Designed and supervised graduate student research projects in natural language processing for Hua Ai, Mihai Rotaru, Beatriz Maeireizo, and Arthur Ward.

Knowledge Representation and Reasoning, Department of Computer Science, Columbia University, Fall 1990 (COMSF6998-33), Spring 1992 (COMSW4725). Created and taught new graduate / senior undergraduate course.

Natural Language Processing, Department of Computer Science, Columbia University, Spring 1991 (COMSW4705). Taught graduate / senior undergraduate course, using the textbook *Natural Language Understanding* by James F. Allen.

Projects in Computer Science, Department of Computer Science, Columbia University, Fall 1991 (COMSF6901), Summer 1992 (COMSS6901). Designed and supervised graduate student research projects in knowledge representation and reasoning and in natural language processing.

SERVICE

Departmental Service

Chair, LRDC Technology Committee, 2010-2011

Chair, Computer Science Graduate Program and Evaluation Committee, 2009-2011; Co-Chair 2006-2007; Member 2008-2009

Member, LRDC Executive Committee, 2010-2011

Member, Computer Science Diversity Committee, 2010-2011

Chair, Joint LRDC-CS Faculty Search Committee, 2009-2010

Member, LRDC Strategic Planning Committee, 2008-2009

Chair, Computer Science Diversity Committee, 2003-2006; Member, 2002-2003

Faculty Advisor, Society for Women in Computing, 2005-2006

Member, Computer Science Faculty Recruiting Committee, 2002-2003

Member, Computer Science Undergraduate Program Committee, 2001-2002

Member, Computer Science Graduate Student Research Award Committee, 2001-2002, 2009

Member, Computer Science Artificial Intelligence Prelims Committee, 2001-present

Member, LRDC Colloquium Committee, 2004-2005

Member, LRDC Faculty Search Committee, 2003-2004

Member, LRDC Computer Resources Committee, 2001-2002

Member, Intelligent Systems Program PhD Admissions Committee, 2001-2002, 2003-2004, 2004-2005

Chair, Computer Science (Columbia University) PhD Admissions Committee, 1992; Member, 1990-1992

Chair, Computer Science (Columbia University) Artificial Intelligence Qualls Committee, 1991-1992;
Member, 1990-1991

Member, Computer Science (Columbia University) Academic Committee, 1991-1992

Member, Computer Science (Columbia University) Faculty Recruiting Committee, 1990-1991

Advising, Computer Science (Columbia University) MS Program, 1991-1992

University Service

Scientific Reviewer, Institutional Review Board, 2009-present

Member, Arts and Sciences Council, 2008-2011

Member, School of Information Sciences Promotion and Tenure Committee, 2006-2007; Ad Hoc Member
2010-2011

Member, Conflict of Interest Committee, 2005-2007

Exhibitor, University of Pittsburgh Booth, Coalition for National Science Funding, Capitol Hill, 2007

Member, Provost's Advisory Committee on Women's Concerns (PACWC), 2002-2005

Member, Faculty of Arts and Sciences Tenure Council, 2003-2005, 2006-2008; Alternate Member,
2002-2003, 2005-2006; Ad Hoc Member 2010-2011

Member, Commission on the Status of Women (Columbia University), 1992.

Industrial Service (AT&T)

Supervisor for Jun Huang (University of Illinois), Summer Internship Program, 2000

Supervisor for Fan Jiang (Duke University), Summer Internship Program, 1999

Supervisor for Shimei Pan (Columbia University), Summer Internship Program, 1997, 1998

Supervisor for Steven Correl (University of Texas), University Relations Summer Program, 1994

Co-Chair, Case-Based Reasoning Task Force, 1992-1993

Co-Chair, Women in Research Seminar Series, 1992-1993

Lab Coordinator, Summer Research Program for Undergraduate Women and Minorities, 1989, 1990

Supervisor for Kimberly Claffy (Stanford University), Summer Research Program for Undergraduate Women and Minorities, 1988

Lab Coordinator, Artificial Intelligence Library, 1986-1987