Mark Owen Riedl

Associate Professor

School of Interactive Computing
College of Computing
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Atlanta, GA 30332-0760, USA

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Educational Background

Ph.D.	2004	North Carolina State University	*Computer Science*
M.S.	2001	North Carolina State University	*Computer Science*
B.S.	1999	North Carolina State University	*Computer Science*

Professional Employment History

Associate Professor	School of Interactive Computing Georgia Institute of Technology	*2014-present*
Assistant Professor	School of Interactive Computing Georgia Institute of Technology	*2007-2014*
Research Scientist	Institute for Creative Technologies University of Southern California	*2004-2007*

Current Fields of Interest

My research fall within the intersection of artificial intelligence, virtual worlds, and storytelling. The principle research question I ask is: "how can intelligent computational systems reason about and autonomously create engaging experiences for users of virtual worlds and computer games." My primary research contributions are in the area of artificial intelligence approaches to automated story generation and interactive storytelling for entertainment, education, and training. Narrative is a cognitive tool used by humans for communication and sense-making. The goal of my narrative intelligence research is to discover new computational algorithms and models that can facilitate the development of intelligent computer systems that can reason about narrative in order to be better communicators, entertainers, and educators.

Areas of research:
Artificial Intelligence
Computational Models of Narrative
Narrative and Story Generation
Computer Game AI
Intelligent Virtual Agents
Human Computation and Crowdsourcing
Virtual Cinematography
Discourse Processing
Intelligent User Interfaces

I. Teaching

A. Courses Taught

Georgia Institute of Technology

Term	Course	Comments
Spring 2017	CS 4731/7632 Game Artificial Intelligence	Grad/undergrad
Fall 2016	CS 3600 Introduction to Artificial Intelligence	
Spring 2016	CS 4731/7632 Game Artificial Intelligence	Grad/undergrad
Fall 2015	CS 3600 Introduction to Artificial Intelligence	
Spring 2015	CS 4731/7632 Game Artificial Intelligence	Grad/undergrad
Fall 2014	CS 7634/4803 Intelligent Storytelling in Virtual Worlds	Grad/undergrad from COC and LMC
Spring 2014	CS 3600 Introduction to Artificial Intelligence	
Spring 2013	CS 3600 Introduction to Artificial Intelligence	
Fall 2012	CS 8803 Advanced Game Artificial Intelligence	Grad/undergrad
Spring 2012	CS 4731/CS 8803 (GAI) Game Artificial Intelligence	Grad/undergrad
Fall 2011	CS 7634 Intelligent Storytelling in Virtual Worlds	Grad/undergrad from COC and LMC
Spring 2011	CS 3600 Introduction to Artificial Intelligence	
Fall 2010	CS 8803 Advanced Game Artificial Intelligence	Grad/undergrad
Spring 2010	CS 3600 Introduction to Artificial Intelligence	
Fall 2009	CS 8803 Intelligent Storytelling in Virtual Worlds	Grad/undergrad from COC and LMC
Spring 2009	CS 3600 Introduction to Artificial Intelligence	
Fall 2008	CS 4731/CS 8803 (GAI) Game Artificial Intelligence	Grad/undergrad

North Carolina State University

Term	Course	Comments
Summer 2002	CSC 116 Introduction to Programming, Java	

B. Curriculum Development

CS 7634 Intelligent Storytelling in Virtual Worlds: This effort is focused toward creating advanced classes about AI and games, storytelling, and entertainment. This class surveys the relevant literature from cognitive science, psychology, narratology, media studies, and artificial intelligence. This course challenges students to invent new ways of using artificial intelligence to interact with, engage, and entertain humans.

CS 4731 Game Artificial Intelligence: The course explores the role of artificial intelligence in computer games and other entertainment computing applications as envisioned for the future. The goal is not to teach students how AI is used in the current generation of games, but to explore the way academic AI can possibly be used to create entertaining experiences. In 2010, CS 4731 was incorporated into the Intelligence Thread. Working with Dr. Brian Magerko in the Digital Media program, we further modified the course structure to satisfy the needs of both the Computer Science and Computational Media undergraduate B.S. degrees. The latter was accompanied by proposed changes to the CM curriculum to include critical prerequisite courses. In 2012, I redesigned the class from the ground up to require a prerequisite Introduction to AI course and focus on more advanced Game AI topics. This unique approach to teaching Game AI emphasizes critical thinking and design over low-level implementation details and is meant to be a model for other universities. **My redesigned class assignments have been adopted by faculty at Northeastern University.**

CS 8803 Advanced Game AI: This course focuses on emerging topics in Game AI that go beyond the classical uses of artificial intelligence in virtual worlds and computer games. The course focuses on a different emerging topic each time taught. The course surveys academic literature on Game AI relevant to the year's theme. Student projects involve implementing state of the art AI algorithms within computer game contexts. In 2010, the course focused on procedural generation of game content—computer levels, quests, non-player characters, etc.—which is now being adopted in the game industry. In 2012, the course focused on intelligent virtual characters that can act as companions to humans in virtual worlds and games.

CS 3600 Introduction to Artificial Intelligence: Working with other faculty who have taught it in the past and will teach it in the future to restructure the course topics to be more relevant to the Intelligence Thread. In 2010, I worked with Andrea Thomaz to implement a complete overhaul of the course projects, adopting a Python-based packages of PacMan projects.

C. Individual Student Guidance

Post-Doctoral Fellows

Brent Harrison (CoC)
Fall 2014-Summer 2017
Publications: *D.2.[1], D.4.[2], D.4.[4], D.4.[6], D.3.[3], D.4.[9], D.4.[12], D.4.[11], D.2.[11], D.2.[10]*
Virtual characters

Rania Hodhod (CoC)
Spring 2013-Fall 2013
Publications: *D.4.[16]*
Story generation

Stephen Lee-Urban (CoC)
Fall 2011-Spring 2014
Publications: *D.3.[8], D.2.[19], B.[3], D.4.[23], D.3.[9], D.4.[24], D.4.[25]*
Story generation

Hua Ai (CoC)
Fall 2010-Fall 2011
Publications: *D.2.[10], D.2.[32]*
Story, animation, and natural language generation (co-advised with Ashwin Ram).

James Niehaus (CoC)
Fall 2008-Fall 2009
Publications: *D.2.[36], D.3.[16], D.4.[32]*
Now a Research Scientist at Charles River Analytics

Ph.D. Students Supervised

Brian O'Neill (CoC)
Fall 2008-Fall 2013
Publications: *E.3.[1], D.4.[17], D.2.[14], D.2.[20], D.2.[27], D.2.[30], D.2.[34], D.3.[14], D.3.[17], D.4.[34]*
Dissertation title: "A Computational Model of Suspense for the Augmentation of Intelligent Story Generation," 2013. Assistant Professor at Western New England University.

Boyang Li (CoC)
Fall 2009-Fall 2014

Publications: *D.2.[2], D.2.[10], D.7.[3], D.2.[13], D.3.[5], D.4.[18], D.3.[8], D.2.[19], B.[3], D.4.[23], D.3.[9], D.2.[22], D.4.[25], D.4.[27], D.7.[4], D.2.[29], D.2.[27], D.2.[10], D.2.[36], D.2.[37], D.4.[30], D.4.[29], E.3.[4]*
Dissertation title: "Learning Knowledge to Support Domain-Independent Narrative Intelligence"

Hong Yu (CoC)
Fall 2011-Spring 2015
Publications: *D.2.[9], D.4.[14], B.[2], D.3.[6], D.3.[7], D.2.[24]*
Dissertation title: "A Data-Driven Approach for Personalized Drama Management"

Alexander Zook (HCC)
Spring 2011-present
Publications: *D.3.[2], D.2.[11], D.2.[12], B.[1], D.2.[15], D.4.[19], D.2.[17], D.2.[18], D.4.[21], D.4.[22], D.2.[20], D.2.[21], D.4.[24], D.2.[22], D.2.[23], D.7.[4], D.2.[28], D.2.[31], D.2.[35]*
Expected graduation: 2015

Kristin Siu (CoC)
Fall 2013-present
Publications: *D.2.[3], D.3.[2], D.2.[4], D.2.[16]*
Human computation games

Spencer Frazier (CoC)
Fall 2013-Spring 2014
Publications: *D.3.[4], D.4.[20]*
Alternate reality games

Matthew Guzdial (CoC)
Fall 2014-present
Publications: *D.4.[1], D.4.[3], D.3.[1], D.2.[2], D.2.[3], D.4.[7], D.2.[7], D.2.[8], D.4.[13], D.2.[10]*
Procedural game generation

Lara Martin (CoC)
Fall 2015-present
Publications: *D.4.[6], D.2.[6]*
Storytelling dialogue

Christopher Purdy (CoC)
Fall 2015-present
Publications: *D.4.[2], D.4.[4], D.2.[5]*
Storytelling dialogue

Siddharth Srinivasan (CoC)
Fall 2016-present
Story generation

Zhiyu Lun (CoC)
Fall 2016-present
interactive machine learning

Upol Ehsan (CoC)
Fall 2016-present
Machine enculturation

Ph.D. Special Problems students

HyunRyong Jung (CoC)
Fall 2011-Spring 2012
Virtual agents and storytelling

Peng Zhou (CoC)
Summer 2010-Spring 2011
Player modeling

Intelligent creativity support

Neha Sugandh (CoC)
Summer 2008
Publications: *D.2.[39]*
Story generation

Master's students

Shruti Singh (CoC)
Fall 2015-Fall 2016
Publications: *D.4.[6]*
Story generation

Sasha Azad (CoC)
Fall 2015-Fall 2016
Publications: *D.4.[8], D.7.[1]*
Augmented reality games

Carl Salanha (CoC)
Fall 2015-present
Publications: *D.4.[8], D.7.[1]*
Augmented reality games

Sanjana Oulkar (CoC)
Spring 2016
Story generation

William Hancock (CoC)
Fall 2015-Spring 2017
Publications: *D.4.[6]*
Improvisational storytelling

Mohini Thakkar (CoC)
Fall 2012-present
Publications: *D.2.[13], D.3.[5], D.4.[18]*
Story generation

Brandon Headrick (CoC)
Fall 2011-Fall 2012
Publications: *D.2.[20]*
Virtual cinematography

Afshin Mobramaein (CoC)
Spring 2012-Spring 2013
Procedural content generation; now a Ph.D. student at UC Santa Cruz.

Michael Drinkwater (CoC)
Spring 2011-Spring 2012
Publications: *D.4.[24]*
Interactive storytelling; now at Knexus.

Sanjeet Hajarnis (CoC)
Fall 2010-Spring 2012
Publications: *D.2.[25], D.2.[26], D.2.[32], D.3.[12], D.7.[5]*
Story generation; now at Facebook.

Ken Hartsook (CoC)
Spring 2010-Spring 2011
Publications: *D.7.[4], D.2.[31]*
Interactive storytelling; now at Electronic Arts.

Chinmay Barve (CoC)
Fall 2009-Spring 2010
Publications: *D.2.[26], D.3.[12], D.7.[5]*
Mobile alternate reality games; now at Yahoo!

Devika Karnik (CoC)
Spring 2010
Publications: *D.2.[26], D.3.[12], D.7.[5]*
Mobile alternate reality games; now at RockYou! games.

Darren Scott Appling (CoC)
Spring 2008-Fall 2009
Publications: *D.2.[3], D.3.[9], D.3.[25], D.3.[36]*
Narrative intelligence; now at GTRI.

Adam Fitzgerald (CoC)
Fall 2008-Summer 2009
Publications: *D.3.[13]*

Gurlal Kahlon (CoC)
Spring 2009-Summer 2009
Publications: *D.3.[13]*

Ankur Aggarwal (CoC)
Fall 2008
Narrative intelligence

Undergraduates

Nicholas Liao (CoC)
Spring 2017-present
Publications: *D.4.[6]*
Story Generation

Prithviraj Ammanabrolu (CoC)
Spring 2017-present
Publications: *D.3.[1]*
Story Generation

Keegan Long (CoC)
Fall 2015
Augmented reality games

Cheng-Hann Gan (CoC)
Fall 2015-present
Publications: *D.4.[8], D.7.[1]*
Augmented reality games

Yijie Wang (CoC)
Fall 2013-present
Publications: *D.2.[13], D.3.[5], D.4.[18]*
Natural language processing

Marc Huet (Computational Media)
Summer 2013-Fall 2013
Publications: *D.4.[16]*
Procedural scene rendering.

John Rafferty (CoC)
Summer 2013-present
Procedural scene rendering.

Eric Fruchter (CoC)
Spring 2013
Procedural content generation.

George Johnston (CoC)
Fall 2012-present
Publications: *D.2.[19]*
Human computation.

Matthew Lee (CoC)
Spring 2013
Human computation and procedural scene rendering.

Karthik Narayan (CoC)
Spring 2011-Spring 2012
Player modeling

William Bishop (CoC)
Spring 2011-Spring 2012
Interactive storytelling

Dallas McCall (CoC)
Fall 2010
Interactive storytelling

Sauvik Das (CoC)
Summer 2010-Spring 2011
Publications: *D.2.[12], D.7.[4], D.2.[31]*
Interactive storytelling; now Ph.D. student at CMU.

Sanjeet Hajarnis (CoC)
Fall 2009-Spring 2010
Publications: *D.7.[5]*
Mobile alternate reality games

Brandon Headrick (CoC)
Summer 2010-Fall 2010
Publications: *D.2.[20], D.2.[25], D.2.[26]*
Mobile alternate reality games

Aziel Ferguson (CoC)
Spring 2009-Summer 2010
Publications: *D.2.[25], D.2.[26]*
Interactive entertainment

Sabrina Heath (CM)
Spring 2009-Fall 2009
Interactive entertainment

John Munro (CoC)
Summer 2008-Fall 2010
Interactive storytelling

Sam Rickles (CM)
Fall 2008-Spring 2010
Game development

Tim van de Vall (CM)
Fall 2008-Spring 2009
Game development

Other students

Andrew MacVean Ph.D. Computer Science, Heriot-Watt University
Fall 2010-Spring 2011
Publications: *D.2.[26], D.3.[11], D.2.[33]*
Mobile alternate reality games

Fatima Boujarwah Ph.D. Human-Centered Computing
Spring 2009-2012
Publications: *D.6.[2], D.5.[2], D.4.[31], D.4.[33]*
Autism intervention (advised by Gregory Abowd)

Nicholas Davis (HCC)
Fall 2010-present
Publications: *D.4.[22], D.2.[20], D.2.[22], B.[4], D.2.[27]*
Intelligent creativity support (advised by Ellen Do)

Jan Gillesen M.S. Industrial Design, Eindhoven University of Technology
Fall 2008
Publications: *D.6.[4]*
Autism intervention

D. Teaching Honors and Awards

1. Georgia Tech. CETL Thank A Teacher Program, March 2016.

II. Research and Creative Scholarship

A. Theses

Ph.D. Thesis

Title: *Story Generation: Balancing Plot and Character*
Date Completed: *September 2004*
Advisor: *R. Michael Young*
University: *North Carolina State University*

M.S. Thesis

Title: *A Computational Model of Navigation in Social Environments*
Date Completed: *May 2001*
Advisor: *Robert St. Amant*
University: *North Carolina State University*

B. Published Journal Papers

[1] Alexander Zook and Mark O. Riedl. Temporal game challenge tailoring. *IEEE Transactions on Computational Intelligence and Artificial Intelligence in Games*, 2014.

[2] Hong Yu and Mark O. Riedl. Personalized interactive narratives via sequential recommendation of plot points. *IEEE Transactions on Computational Intelligence and Artificial Intelligence in Games*, 6(2), 2014.

[3] Boyang Li, Stephen Lee-Urban, D. Scott Appling, and Mark O. Riedl. Crowdsourcing narrative intelligence. *Advances in Cognitive Systems*, 2:25–42, December 2012.

[4] Michael Nitsche, Mark Riedl, and Nicholas Davis. Creativity, cognition, and machinima. *Animation Journal*, 19:50–66, 2011.

[5] Mark O. Riedl and R. Michael Young. Narrative planning: Balancing plot and character. *Journal of Artificial Intelligence Research*, 39:217–268, 2010.

[6] Mark O. Riedl. Case-based story planning: Creativity through exploration, retrieval, and analogical transformation. *Minds and Machines*, 20(4), 2010.

[7] Mark O. Riedl, Andrew Stern, Don M. Dini, and Jason M. Alderman. Dynamic experience management in virtual worlds for entertainment, education, and training. *International Transactions on System Science and Applications*, 3(1):23–42, 2008.

[8] Mark O. Riedl and R. Michael Young. From linear story generation to branching story graphs. *IEEE Journal of Computer Graphics and Animation*, 26(3):23–31, 2006.

[9] Mark O. Riedl and R. Michael Young. Story planning as exploratory creativity: Techniques for expanding the narrative search space. *New Generation Computing*, 24(3):303–323, 2006.

[10] R. Michael Young, Mark O. Riedl, Mark Branly, Arnav Jhala, R.J. Martin, and C.J. Saretto. An architecture for integrating plan-based behavior generation with interactive game environments. *Journal of Game Development*, 1:51–70, 2004.

[11] Robert St. Amant and Mark O. Riedl. A perception/action substrate for cognitive modeling in HCI. *International Journal of Human-Computer Studies*, 55(1):15–39, 2000.

C. Edited Proceedings

[1] *Proceedings of the 8th AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*, 2012.

[2] *Proceedings of the 7th AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*, 2011.

[3] *Proceedings of the 3rd Workshop on Intelligent Narrative Technologies*, 2010.

[4] *Proceedings of the 3rd International Conference on Interactive Digital Storytelling*, 2010.

[5] *Intelligent Narrative Technologies: Papers from the 2007 Fall Symposium*, 2007.

[6] *Proceedings of the 13th International Conference on Artificial Intelligence in Education Workshop on Narrative Learning Environments*, 2007.

D. Conference Presentations

D.1. Invited Keynote Addresses

[1] Mark O. Riedl. Computational narrative intelligence: Past, present, and future. Invited Keynote at the 10th AAAI Workshop on Intelligent Narrative Technologies, October 2017.

[2] Learning to make stuff. Invited keynote at the 2017 KDD Workshop on Machine Learning and Creativity, August 2017.

[3] Computational narrative intelligence: From games to robots. Invited Keynote at the 2016 International Conference on Intelligent Technologies for Entertainment (INTETAIN), June 2016.

[4] Toward the grand challenge of automated filmmaking. Invited Keynote at the AAAI 2014 Workshop on Cinematography and Editing, July 2014.

[5] Artificial intelligence for interactive narrative. Invited Keynote at the 2014 International Conference on Computational Intelligence in Games, August 2014.

[6] Intelligent narrative generation: From cognition to crowdsourcing. Invited Keynote at the NAACL HLT Workshop on Computational Linguistics for Literature, June 2013.

[7] Semi-automated creativity: The Georgia Tech landscape. Invited keynote at the ACM Conference on Creativity and Cognition Workshop on Semi-Automated Creativity, November 2011.

[8] Interactive storytelling: Partnerships between human, designer, and system. Invited keynote at the AAAI Spring Symposium on Help Me Help You: Bridging the Gaps in Human-Agent Collaboration, March 2011.

[9] The role of AI, storytelling, and creativity in entertainment. Invited keynote at the 5th Annual North American GameOn Conference on Simulation and AI in Computer Games, August 2009.

D.2. Conference Presentations with Proceedings (refereed and archived)

[Refereed publications in respected conferences, with extensive reviewing, and appearing in archival proceedings. For the purposes of this vita, refereed means full paper (not just abstract) reviewed by two or more peers. Review by an editor is not considered refereed.]

[1] Lara J. Martin, Prithviraj Ammanabrolu, Xinyu Wang, William Hancock, Shruti Singh, Brent Harrison, and Mark O. Riedl. Event representations for automated story generation with deep neural nets. In *Proceedings of the 2018 Conference of the Association for the Advancement of Artificial Intelligence*, 2018.

[2] Matthew Guzdial and Mark O. Riedl. Game engine learning from video. In *Proceedings of the 2017 International Conference on Artificial Intelligence*, 2017.

[3] Kristin Siu, Matthew Guzdial, and Mark O. Riedl. Evaluating singleplayer and multiplayer in human computation games. In *Proceedings of the 2017 International Conference on the Foundations of Digital Games*, 2017.

[4] Kristin Siu and Mark Riedl. Reward systems in human computation games. In *Proceedings of the 2016 ACM SIGCHI Annual Symposium on Computer-Human Interaction in Play*, 2016.

[5] Christopher Purdy and Mark O. Riedl. Reading between the lines: Using plot graphs to draw inferences from stories. In *Proceedings of the 2016 International Conference on Interactive Digital Storytelling*, 2016.

[6] Laura J. Martin, Brent Harrison, and Mark O. Riedl. Improvisational computational storytelling in open worlds. In *Proceedings of the 2016 International Conference on Interactive Digital Storytelling*, 2016.

[7] Matthew Guzdial and Mark O. Riedl. Game level generation from gameplay videos. In *Proceedings of the 2016 AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*, 2016.

[8] Matthew Guzdial and Mark Riedl. Learning to blend computer game levels. In *Proceedings of the 2016 International Conference on Computational Creativity*, 2016.

[9] Hong Yu and Mark O. Riedl. Optimizing players' expected enjoyment in interactive stories. In *Proceedings of the 11th Annual AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*, 2015.

[10] Matthew Guzdial, Brent Harrison, Boyang Li, and Mark O. Riedl. Crowdsourcing open interactive narrative. In *Proceedings of the 2015 Conference on the Foundations of Digital Games*, 2015.

[11] Alexander Zook, Brent Harrison, and Mark O. Riedl. Monte-carlo tree search for simulation-based play strategy analysis. In *Proceedings of the 2015 Conference on the Foundations of Digital Games*, 2015.

[12] Sauvik Das, Alexander Zook, and Mark. O. Riedl. Examining game world topology personalization. In *Working Note in the Proceedings of the 2015 ACM SIGCHI Conference on Human-Computer Interaction*, 2015.

[13] Boyang Li, Mohini Thakkar, Yijie Wang, and Mark O. Riedl. Data-driven storytelling agents with adjustable personal traits and sentiments. In *Proceedings of the 7th International Conference on Interactive Digital Storytelling*, 2014.

[14] Brian C. O'Neill and Mark O. Riedl. Dramatis: A computational model of suspense. In *Proceedings of the 28th AAAI Conference on Artificial Intelligence*, 2014.

[15] Alexander Zook and Mark O. Riedl. Automatic game design via mechanic generation. In *Proceedings of the 28th AAAI Conference on Artificial Intelligence*, 2014.

[16] Kristin Siu, Alexander Zook, and Mark O. Riedl. Collaboration versus competition: Design and evaluation of mechanics for games with a purpose. In *Proceedings of the Ninth International Conference on the Foundations of Digital Games*, 2014.

[17] Alexander Zook, Eric Fruchter, and Mark O. Riedl. Automatic playtesting for game parameter tuning via active learning. In *Proceedings of the Ninth International Conference on the Foundations of Digital Games*, 2014.

[18] Mark O. Riedl and Alexander Zook. Game AI as producer. In *Proceedings of the 2013 IEEE Conference on Computational Intelligence in Games*, Niagra Falls, Canada, August 2013.

[19] Boyang Li, Stephen Lee-Urban, George Johnston, and Mark O. Riedl. Story generation with crowdsourced plot graphs. In *Proceedings of the 27th AAAI Conference on Artificial Intelligence*, Bellevue, Washington, July 2013.

[20] Nick Davis, Alexander Zook, Brian O'Neill, Michael Nitsche, and Mark Riedl. Creativity support for novice digital filmmaking. In *Proceedings of the 2013 ACM SIGCHI Conference on Human-Computer Interaction*, pages 651–660, Paris, France, April 2013.

[21] Alexander Zook and Mark O. Riedl. A temporal data-driven player model for dynamic difficulty adjustment. In *Proceedings of the 8th AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*, pages 93–98, Palo Alto, California, October 2012.

[22] Boyang Li, Alexander Zook, Nicholas Davis, and Mark O. Riedl. Goal-driven conceptual blending: A computational approach for creativity. In *Proceedings of the 3rd International Conference on Computational Creativity*, pages 9–16, Dublin, Ireland, May 2012.

[23] Alexander Zook, Mark O. Riedl, Heather K. Holden, Robert A. Sottilare, and Keith W. Brawner. Automated scenario generation: Toward tailored and optimized military training in virtual environments. In *Proceedings of the 7th International Conference on the Foundations of Digital Games*, pages 164–171, Raleigh, North Carolina, May 2012.

[24] Hong Yu and Mark O. Riedl. A sequential recommendation approach for interactive personalized story generation. In *Proceedings of the 11th International Conference on Autonomous Agents and Multi Agent Systems*, pages 71–78, Valencia, Spain, June 2012.

[25] Sanjeet Hajarnis, Brandon Headrick, Aziel Ferguson, and Mark O. Riedl. Scaling mobile alternate reality games with geo-location translation. In *Proceedings of the 4th International Conference on Interactive Digital Storytelling*, pages 278–283, Vancouver, Canada, November 2011.

[26] Andrew MacVean, Sanjeet Hajarnis, Brandon Headrick, Aziel Ferguson, Chinmay Barve, Devika Karnik, and Mark O. Riedl. WeQuest: Scalable alternate reality games through end-user content authoring. In *Proceedings of the 8th International Conference on Advances in Computer Entertainment Technology*, Lisbon, Portugal, June 2011.

[27] Nicholas Davis, Boyang Li, Brian O'Neill, and Mark O. Riedl. Distributed creative cognition in digital filmmaking. In *Proceedings of the 8th ACM Conference on Creativity and Cognition*, pages 207–216, Atlanta, Georgia, November 2011.

[28] Alexander Zook, Mark O. Riedl, and Brian Magerko. Formally modeling pretend object play. In *Proceedings of the 8th ACM Conference on Creativity and Cognition*, pages 147–156, Atlanta, Georga, November 2011.

[29] Boyang Li and Mark O. Riedl. Creative gadget design in fictions: Generating novel object types in analogical spaces. In *Proceedings of the 8th ACM Conference on Creativity and Cognition*, pages 41–50, Atlanta, Georgia, November 2011.

[30] Brian O'Neill and Mark Riedl. Toward a computational framework of suspense and dramatic arc. In *Proceedings of the 4th International Conference on Affective Computing and Intelligent Interaction*, pages 246–255, Memphis, Tennessee, October 2011.

[31] Ken Hartsook, Alexander Zook, Sauvik Das, and Mark Riedl. Toward supporting storytellers with procedurally generated game worlds. In *Proceedings of the 2011 IEEE Conference on Computational Intelligence in Games*, pages 297–304, Seoul, South Korea, August 2011.

[32] Sanjeet Hajarnis, Christina Leber, Hua Ai, Mark Riedl, and Ashwin Ram. A case base planning approach for dialogue generation in digital movie design. In *Proceedings of the 19th International Conference on Case Based Reasoning*, pages 452–466, Greenwich, London, England, September 2011.

[33] Andrew Macvean and Mark O. Riedl. Evaluating enjoyment within alternate reality games. In *Proceedings of the 38th International Conference on Computer Graphics and Interactive Techniques*, Vancouver, Canada, August 2011.

[34] Brian O'Neill and Mark O. Riedl. Simulating the everyday creativity of readers. In *Proceedings of the 2nd International Conference on Computational Creativity*, pages 153–158, Mexio City, Mexico, April 2011.

[35] Alexander Zook, Mark O. Riedl, and Brian Magerko. Understanding human creativity for computational play. In *Proceedings of the 2nd International Conference on Computational Creativity*, pages 42–47, Mexico City, Mexico, April 2011.

[36] James Niehaus, Boyang Li, and Mark Riedl. Automated scenario adaptation in support of intelligent tutoring systems. In *Proceedings of the 24th Conference of the Florida Artificial Intelligence Research Society, Special Track on Intelligent Tutoring Systems*, pages 531–536, Palm Beach, Florida, May 2011.

[37] Boyang Li and Mark O. Riedl. An offline planning approach to game plotline adaptation. In *Proceedings of the 6th Conference on Artificial Intelligence for Interactive Digital Entertainment Conference*, pages 45–50, Palo Alto, California, October 2010.

[38] Brian Magerko, Waleed Manzoul, Mark Riedl, Allan Baumer, Daniel Fuller, Kurt Luther, and Celia Pearce. An empirical study of cognition and theatrical improvisation. In *Proceedings of the 7th Creativity and Cognition Conference*, pages 117–126, Berkeley, California, October 2009.

[39] Mark O. Riedl and Neha Sugandh. Story planning with vignettes: Toward overcoming the content production bottleneck. In *Proceedings of the 1st Joint International Conference on Interactive Digital Storytelling*, pages 168–179, Erfurt, Germany, November 2008.

[40] David Roberts, Charles Isbell, Mark O. Riedl, and Merrick Furst. On the use of computational models of influence for managing interactive virtual experiences. In *Proceedings of the 1st Joint International Conference on Interactive Digital Storytelling*, pages 268–272, Erfurt, Germany, November 2008.

[41] Mei Si, Stacy Marsella, and Mark O. Riedl. Integrating plot-centric and character-centric processes for authoring interactive drama. In *Proceedings of the 4th Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE)*, pages 203–208, Palo Alto, California, October 2008.

[42] Mark O. Riedl, Jonathan P. Rowe, and David K. Elson. Toward intelligent support of authoring machinima media content: Story and visualization. In *Proceedings of the 2nd International Conference on Intelligent Technologies for Interactive Entertainment (INTETAIN)*, Playa del Carmen, Mexico, January 2008.

[43] David K. Elson and Mark O. Riedl. A lightweight intelligent virtual cinematography system for machinima production. In *Proceedings of the 3rd AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*, pages 8–13, Palo Alto, California, October 2007.

[44] Mark O. Riedl and Andrew Stern. Believable agents and intelligent story adaptation for interactive storytelling. In *Proceedings of the 3rd International Conference on Technologies for Interactive Digital Storytelling and Entertainment (TIDSE)*, pages 1–12, Darmstadt, Germany, December 2006.

[45] Mark O. Riedl and Andrew Stern. Failing believably: Toward strong autonomy and strong story in interactive narratives. In *Proceedings of the 3rd International Conference on Technologies for Interactive Digital Storytelling and Entertainment*, pages 195–206, Darmstadt, Germany, December 2006.

[46] Mark O. Riedl and Andrew Stern. Believable agents and intelligent scenario direction for social and cultural leadership training. In *Proceedings of the 15th Conference on Behavior Representation in Modeling and Simulation (BRIMS)*, 2006.

[47] Mark O. Riedl and R. Michael Young. An objective character believability evaluation procedure for multi-agent story generation systems. In *Proceedings of the 5th International Conference on Intelligent Virtual Agents (IVA)*, pages 278–291, Kos, Greece, September 2005.

[48] Mark O. Riedl and R. Michael Young. From linear story generation to branching story graphs. In *Proceedings of the 1st Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE)*, pages 111–116, Maria Del Rey, California, June 2005.

[49] Robert St. Amant and Mark O. Riedl. Image processing in cognitive models with SegMan. In *Proceedings of the 11th International Conference on Human-Computer Interaction (HCII)*, Las Vegas, Nevada, July 2005.

[50] Michael van Lent, Mark O. Riedl, Paul Carpenter, Ryan McAlinden, and Paul Brobst. Increasing replayability with deliberative and reactive planning. In *Proceedings of the 1st Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE)*, pages 135–140, Maria Del Rey, California, June 2005.

[51] Mark O. Riedl and R. Michael Young. A planning approach to story generation for history education. In *Proceedings of the 3rd International Conference on Narrative and Interactive Learning Environments (NILE)*, 2004.

[52] Mark O. Riedl and R. Michael Young. An intent-driven planner for multi-agent story generation. In *Proceedings of the 3rd International Conference on Autonomous Agents and Multi-Agent Systems*, pages 186–193, New York City, New York, July 2004.

[53] Mark O. Riedl, C.J. Saretto, and R. Michael Young. Managing interaction between users and agents in a multi-agent storytelling environment. In *Proceedings of the 2nd International Conference on Autonomous Agents and Multi-Agent Systems*, pages 741–748, Melbourne, Australia, July 2003.

[54] Mark O. Riedl and Robert St. Amant. Social navigation: Modeling, simulation, and experimentation. In *Proceedings of the 2nd International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS)*, pages 361–368, Melbourne, Australia, July 2003.

[55] Mark O. Riedl and R. Michael Young. Character-focused narrative planning for execution in virtual worlds. In *Proceedings of the 2nd International Conference on Virtual Storytelling (ICVS)*, pages 47–56, Toulouse, France, November 2003.

[56] Mark O. Riedl and Robert St. Amant. Towards automated exploration of interactive systems. In *Proceedings of the 7th International Conference on Intelligent User Interfaces (IUI)*, pages 135–142, San Francisco, California, January 2002.

[57] Mark O. Riedl. A computational model and classification framework for social navigation. In *Proceedings of the 6th International Conference on Intelligent User Interfaces (IUI)*, pages 137–144, Santa Fe, New Mexico, January 2001.

[58] Robert St. Amant, Christopher G. Healey, Mark O. Riedl, Sarat Kocherlakota, David A. Pegram, and Mika Torhola. Intelligent visualization in a planning simulation. In *Proceedings of the 6th International Conference on Intelligent User Interfaces*, pages 153–159, Santa Fe, New Mexico, January 2001.

D.3. Conference Poster Presentations with Proceedings (refereed and archived)

[Papers accepted for poster presentation in refereed and archival conferences or workshops. Acceptance rates of poster acceptances are typically above 50% unless otherwise noted.]

[1] Nicholas Liao, Matthew Guzdial, and Mark O. Riedl. Deep convolutional player modeling on log and level data. In *Proceedings of the 2017 Conference on the Foundations of Digital Games*, 2017.

[2] Kristin Siu, Alexander Zook, and Mark O. Riedl. The role of artificial intelligence in the creation of a science of game design for human computation games. In *Proceedings of the 2017 International Conference on the Foundations of Digital Games*, 2017.

[3] Brent Harrsion and Mark O Riedl. Learning from stories: Using crowdsourced narratives to train virtual agents. In *Proceedings of the 2016 AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*, 2016.

[4] Spencer Frazier and Mark O. Riedl. Persistent and pervasive real-world sensing using games. In *Proceedings of the 2nd AAAI Conference on Human Computation and Crowdsourcing, Works in Progress Track*, 2014.

[5] Boyang Li, Mohini Thakkar, Yijie Wang, and Mark O. Riedl. From data to storytelling agents. In *Proceedings of the 14th International Conference on Intelligent Virtual Agents*, 2014.

[6] Hong Yu and Mark O. Riedl. A data-driven personalized drama manager. In *Proceedings of the Ninth AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*, October 2013.

[7] Hong Yu and Mark O. Riedl. Toward personalized guidance in interactive narratives. In *Proceedings of the 8th International Conference on the Foundations of Digital Games*, Chaina, Crete, Greece, May 2013.

[8] Boyang Li, Stephen Lee-Urban, and Mark O. Riedl. Crowdsourcing interactive fiction games. In *Proceedings of the 8th International Conference on the Foundations of Digital Games*, Chania, Crete, Greece, May 2013.

[9] Boyang Li, D. Scott Appling, Stephen Lee-Urban, and Mark O. Riedl. Learning sociocultural knowledge via crowdsourced examples. In *Proceedings of the 4th Workshop on Human Computation*, Toronto, Canada, July 2012.

[10] Mark O. Riedl, Boyang Li, Hua Ai, and Ashwin Ram. Robust and authorable multiplayer interactive narrative experiences. In *Proceedings of the 7th Conference on Artificial Intelligence for Interactive Digital Entertainment*, Palo Alto, California, October 2011.

[11] Andrew MacVean and Mark O. Riedl. An enjoyment metric for the evaluation of alternate reality games. In *Proceedings of the 6th International Conference on the Foundations of Digital Games*, Bordeaux, France, June 2011.

[12] Sanjeet Hajarnis, Chinmay Barve, Devika Karnik, and Mark O. Riedl. Supporting end-user authoring of alternate reality games with cross-location compatibility. In *Proceedings of the 24th Conference of the Florida Artificial Intelligence Research Society*, Palm Beach, Florida, May 2011.

[13] Adam Fitzgerald, Gurlal Kahlon, and Mark O. Riedl. A computational model of emotional response to stories. In *Proceedings of the 2nd Joint International Conference on Interactive Digital Storytelling*, pages 312–315, Guimarães, Portugal, December 2009.

[14] Brian O'Neill and Mark O. Riedl. Supporting human creative story authoring with a synthetic audience. In *Proceedings of the 7th Creativity and Cognition Conference*, Berkeley, California, October 2009.

[15] Mark O. Riedl and Carlos León. Generating story analogues. In *Proceedings of the 5th AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*, Palo Alto, California, October 2009.

[16] James Niehaus and Mark O. Riedl. Toward scenario adaptation for learning. In *Proceedings of the 14th International Conference on Artificial Intelligence in Education (AIED)*, Brighton, England, July 2009.

[17] Brian O'Neill, Mark Riedl, and Michael Nitsche. Towards intelligent authoring tools for machinima creation. In *Proceedings of the 27th CHI Conference, Works in Progress Track*, Boston, Massachusetts, April 2009.

[18] Mark O. Riedl. Computationally creative search for stories. In *Proceedings of the 3rd International Conference on Design Computing and Cognition (DCC)*, Atlanta, Georgia, June 2008.

[19] R. Michael Young and Mark O. Riedl. Integrating plan-based behavior generation with game environments. In *Proceedings of the 2nd International Conference on Advances in Computer Entertainment Technology (ACE)*, Valencia, Spain, June 2005.

[20] Mark O. Riedl and R. Michael Young. Open-world planning for story generation. In *Proceedings of the 19th International Joint Conference on Artificial Intelligence (IJCAI)*, Edinburgh, Scotland, July 2005.

D.4. Workshop and Symposia Presentations with Proceedings (refereed)

[Publication (as a full paper, a short paper or a technical note) in peer refereed workshop proceedings.]

[1] Matthew Guzdial and Mark O. Riedl. Combinatorial creativity for procedural content generation via machine learning. In *Proceedings of the AAAI 2018 Workshop on Knowledge Extraction in Games*, 2018.

[2] Lara J. Martin, Prithviraj Ammanabrolu, Xinyu Wang, Shruti Singh, Brent Harrison, Murtaza Dhuliawala, Pradyumna Tambwekar, Animesh Mehta, Richa Arora, Nathan Dass, Chris Purdy, and Mark O. Riedl. Improvisational storytelling agents. In *Proceedings of the NIPS 2017 Workshop on Machine Learning for Creativity and Design*, 2017.

[3] Matthew Guzdial and Mark O. Riedl. Combinatorial meta search. In *Proceedings of the NIPS 2017 Workshop on Machine Learning for Creativity and Design*, 2017.

[4] Brent Harrison, Christopher Purdy, and Mark O. Riedl. Toward automated story generation with markov chain monte carlo methods and deep neural networks. In *Proceedings of the 2017 AAAI Workshop on Intelligent Narrative Technologies*, 2017.

[5] Matthew Guzdial, Jonathan Chen, Shao-Yu Chen, and Mark O. Riedl. A general level design editor for co-creative level design. In *Proceedings of the AAAI 2017 Workshop on Experimental AI in Games*, 2017.

[6] Lara J. Martin, Prithviraj Ammanabrolu, William Hancock, Shruti Singh, Brent Harrison, and Mark O. Riedl. Event representations for automated story generation with deep neural nets. In *Proceedings of the KDD 2017 Workshop on Machine Learning for Creativity*, 2017.

[7] Adam Summerville, Matthew Guzdial, Mark O. Riedl, and Michael Mateas. Learning player tailored content from observation: Platformer level generation from video traces using LSTMs. In *Proceedings of the 2016 AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*, 2016.

[8] Sasha Azad, Carl Saldahna, Cheng Hann Gan, and Mark O. Riedl. Mixed reality and procedural content generation in video games. In *Proceedings of the 3rd AAAI Workshop on Experimental Artificial Intelligence in Games*, 2016.

[9] Brent Harrison, Siddhartha Banerjee, and Mark O. Riedl. Learning from stories: Using natural communication to train believable agents. In *Proceedings of the 2016 IJCAI Workshop on Interactive Machine Learning*, 2016.

[10] Mark O. Riedl. Computational narrative intelligence: A human-centered goal for artificial intelligence. In *Proceedings of the CHI 2016 Workshop on Human Centered Machine Learning*, 2016.

[11] Mark Riedl and Brent Harrison. Using stories to teach human values to artificial agents. In *Proceedings of the 2nd International Workshop on AI, Ethics and Society*, 2016.

[12] Brent Harrison and Mark Riedl. Towards learning from stories: An approach for interactive machine learning. In *Proceedings of the AAAI'16 Workshop on Symbiotic Cognitive Systems*, 2016.

[13] Matthew Guzdial and Mark O. Riedl. Toward game level generation from gameplay videos. In *Proceedings of the 2015 Workshop on Procedural Content Generation*, 2015.

[14] Hong Yu and Mark O. Riedl. Automatic generation of game-based CAPTCHAs. In *Proceedings of the 2015 Workshop on Procedural Content Generation*, 2015.

[15] Mark O. Riedl. The Lovelace 2.0 Test of artificial creativity and intelligence. In *Proceedings of the AAAI Workshop: Beyond the Turing Test*, 2015.

[16] Rania Hodhod, Marc Huet, and Mark O. Riedl. Toward generating 3d games with the help of commonsense knowledge and the crowd. In *Proceedings of the AAAI Workshop on Experimental AI in Games*, 2014.

[17] Brian C. O'Neill and Mark O. Riedl. Applying qualitative research methods to narrative knowledge engineering. In *Proceedings of the 2014 Workshop on Computational Models of Narrative*, 2014.

[18] Boyang Li, Mohini Thakkar, Yijie Wang, and Mark O. Riedl. Data-driven alibi story telling for social believability. In *Proceedings of the 2014 Foundations of Digital Games workshop on Social Believability in Games*, 2014.

[19] Alexander Zook and Mark O. Riedl. Generating and adapting game mechanics. In *Proceedings of the 2014 Foundations of Digital Games workshop on Procedural Content Generation in Games*, 2014.

[20] Spencer Frazier and Mark O. Riedl. Toward using games and artificial intelligence to proactively sense the real world. In *Proceedings of the 2014 AISB Symposium on AI and Games*, 2014.

[21] Alexander Zook and Mark O. Riedl. Game conceptualization and development processes in the global game jam. In *Proceedings of the FDG'13 Workshop on the Global Game Jam*, Chaina, Crete, Greece, May 2013.

[22] Nicholas Davis, Alexander Zook, Friedrich Kirschner, Mark O. Riedl, and Michael Nitsche. Techniques for evaluating novice-oriented creativity support tools. In *Proceedings of the CHI 2013 Workshop on Evaluation Methods for Creativity Support Environments*, Paris, France, April 2013.

[23] Boyang Li, Stephen Lee-Urban, and Mark O. Riedl. Toward autonomous crowd-powered creation of interactive narratives. In *Proceedings of the 5th Workshop on Intelligent Narrative Technologies*, pages 20–25, Palo Alto, California, October 2012.

[24] Alexander Zook, Steve Lee-Urban, Michael Drinkwater, and Mark O. Riedl. Skill-based mission generation: A data-driven temporal player modeling approach. In *Proceedings of the Foundations of Digital Games 2012 Workshop On Procedural Content Generation in Games*, Raleigh, North Carolina, May 2012.

[25] Boyang Li, Steve Lee-Urban, D. Scott Appling, and Mark O. Riedl. Automatically learning to tell stories about social situations from the crowd. In *Proceedings of the 2012 Workshop on Computational Models of Narrative*, Istanbul, Turkey, May 2012.

[26] Mark O. Riedl and Andrew Macvean. Addressing scalability limitations of mobile alternate reality games through end-user content authoring. In *Proceedings of the ACE 2011 Workshop on New Narrative Frontiers: Alternate Reality Games*, Lisbon, Portugal, June 2011.

[27] Boyang Li and Mark O. Riedl. A phone that cures your flu: Generating imaginary gadgets in fictions with planning and analogies. In *Proceedings of the 4th Workshop on Intelligent Narrative Technologies*, pages 41–48, Palo Alto, California, October 2011.

[28] Mark O. Riedl. A comparison of interactive narrative system approaches using human improvisational actors. In *Workshop on Intelligent Narrative Technologies III*, Monterey, California, June 2010.

[29] Boyang Li and Mark O. Riedl. Planning for individualized experiences with quest-centric game adaptation. In *ICAPS 2010 Workshop on Planning in Games*, Toronto, Canada, May 2010.

[30] Mark O. Riedl and Boyang Li. Creating customized virtual experiences by leveraging human creative effort: A desideratum. In *Workshop on Collaborative Human/AI Control for Interactive Experiences*, Toronto, Canada, May 2010.

[31] Mark O. Riedl, Rosa Arriaga, Fatima Boujarwah, Hwajung Hong, Jackie Isbell, and L. Juane Heflin. Graphical social scenarios: Toward intervention and authoring for adolescents with high functioning autism. In *Proceedings of the of the AAAI Fall Symposium on Virtual Healthcare Interaction*, pages 64–73, Washington, D.C., November 2009.

[32] James Niehaus and Mark O. Riedl. Scenario adaptation: An approach to customizing computer-based training games and simulations. In *Proceedings of the 14th International Conference on Artificial Intelligence in Education Workshop on Intelligent Educational Games*, Brighton, England, July 2009.

[33] Mark O. Riedl, Jackie Isbell, Rosa Arriaga, Fatima Boujarwah, Hwajung Hong, and L. Juane Heflin. Toward assisted authoring of social skill scenarios for young adults with high functioning autism. In *Working notes of the International Joint Conference on Artificial Intelligence, Workshop on Intelligent Systems for Assisted Cognition*, Pasadena, California, July 2009.

[34] Mark O. Riedl and Brian O'Neill. Computer as audience: A strategy for artificial intelligence support of human creativity. In *Proceedings of the 2009 CHI Workshop on Computational Creativity Support*, Boston, Massachusetts, April 2009.

[35] Mark O. Riedl. Incorporating authorial intent into generative narrative systems. In Sandy Louchart, David Roberts, and Manish Mehta, editors, *Intelligent Narrative Technologies II: Papers from the 2009 Spring Symposium (Technical Report SS-09-06)*, pages 91–94, Palo Alto, California, March 2009. AAAI Press.

[36] D. Scott Appling and Mark O. Riedl. The role of plot understanding in plot generation. In Sandy Louchart, David Roberts, and Manish Mehta, editors, *Intelligent Narrative Technologies II: Papers from the 2009 Spring Symposium (Technical Report SS-09-06)*, pages 1–4, Palo Alto, California, March 2009. AAAI Press.

[37] Mark O. Riedl. Vignette-based story planning: Creativity through exploration and retrieval. In *Proceedings of the 5th International Joint Workshop on Computational Creativity*, Madrid, Spain, September 2008.

[38] Brian S. Magerko and Mark O. Riedl. What happens next?: Toward an empirical investigation of improvisational theatre. In *Proceedings of the 5th International Joint Workshop on Computational Creativity*, Madrid, Spain, September 2008.

[39] Mei Si, Stacy Marsella, and Mark O. Riedl. Interactive drama authoring with plot and character: An intelligent system that fosters creativity. In Dan Ventura, Mary Lou Maher, and Simon Colton, editors, *Creative Intelligent Systems: Papers from the 2008 Spring Symposium*, pages 75–81, Palo Alto, California, March 2008. AAAI Press.

[40] Mark O. Riedl and Carlos León. Toward vignette-based story generation for drama management systems. In *Proceedings of the 2nd International Conference on Intelligent Technologies for Interactive Entertainment (INTETAIN), Workshop on Integrating Technologies for Interactive Stories*, Playa del Carmen, Mexico, January 2008.

[41] Mark O. Riedl and R. Michael Young. Story planning as exploratory creativity: Techniques for expanding the narrative search space. In *Proceedings of the 19th International Joint Conference on Artificial Intelligence (IJCAI) Workshop on Computational Creativity*, Edinburgh, Scotland, July 2005.

[42] Mark O. Riedl. Towards integrating AI story controllers and game engines: Reconciling world state representations. In *Proceedings of the 19th International Joint Conference on Artificial Intelligence (IJCAI) Workshop on Reasoning, Representation, and Learning in Computer Games*, Edinburgh, Scotland, July 2005.

[43] Mark O. Riedl, H. Chad Lane, Randall Hill, and William Swartout. Automated story direction and intelligent tutoring: Towards a unifying architecture. In *Proceedings of the 13th International Conference on Artificial Intelligence in Education (AIED) Workshop on Narrative Learning Environments*, Amsterdam, Netherlands, July 2005.

[44] David B. Christian, Mark O. Riedl, and R. Michael Young. Conversation starters: Using spatial context to initiate dialogue in first person perspective games. In Ken Forbus and Magy Seif El-Nasr, editors, *Artificial Intelligence and Interactive Entertainment: Papers from the 2002 Spring Symposium (Technical Report SS-02-01)*, Palo Alto, California, March 2002. AAAI Press.

[45] David A. Pegram, Robert St. Amant, and Mark O. Riedl. An approach to visual interaction in mixed-initiative planning. In *Proceedings of the 1999 AAAI Mixed-Initiative Intelligence Workshop*, 1999.

D.5. Refereed Magazine Articles

[Articles in trade press magazines reviewed by three or more peers.]

[1] Mark O. Riedl and Vadim Bulitko. Interactive narrative: An intelligent systems approach. *AI Magazine*, 34(1):67–77, Spring 2013.

[2] Fatima Boujarwah, Mark O. Riedl, Gregory Abowd, and Rosa Arriaga. REACT: Intelligent authoring of social skills instructional modules for adolescents with high-functioning autism. *ACM SIGACCESS Newsletter*, 99:13–24, January 2011.

[3] Mark Riedl. Scalable personalization of interactive experiences through creative automation. *Computers In Entertainment*, 8(4), 2010.

D.6. Conference Presentations with Proceedings (abstract refereed)

[Papers accepted to conferences based on abstracts receiving reviews by three or more peers.]

[1] Scott Robertson, Rob Solomon, Mark O. Riedl, Theresa Gillespie, Arun Mohan, Toni Chociemski, and Viraj Master. The visual design and implementation of an embodied conversation agent in a shared decision context. In *Proceedings of the 17th International Conference on Human-Computer Interaction*, 2015.

[2] Fatima Boujarwah, Mark O. Riedl, Gregory Abowd, and Rosa Arriaga. Building a knowledge base to support the authoring of social skills instructional modules. In *Proceedings of the International Meeting for Autism Research (IMFAR)*, San Diego, California, May 2011.

[3] David L. Roberts, Mark O. Riedl, and Charles Isbell. Beyond adversarial: The case for game AI as storytelling. In *Proceedings of the 2009 Conference of the Digital Games Research Association*, London, England, September 2009.

[4] Jan Gillesen, Rosa Ariaga, and Mark O. Riedl. Towards designing an interactive and intelligent tool for social skill development of individuals with hfa. In *Proceedings of the 2009 Annual Meeting for Autism Research (IMFAR)*, Chicago, Illinois, May 2009.

[5] David L. Roberts, Mark O. Riedl, and Charles L. Isbell. Opportunities for machine learning to impact interactive narrative. In *Proceedings of the 21st Annual Conference on Neural Information Processing Systems, Workshop on Machine Learning and Games (MALAGA)*, Whistler, Canada, December 2007.

[6] Mark O. Riedl. Emergent and guided narrative for training and education in virtual worlds. In *League of World 3: Annual Colloquium on Online Simulations, Role-Playing, and Virtual Worlds*, 2006.

D.7. Refereed Demos and Videos

[1] Sasha Azad, Carl Saldahna, Cheng Hann Gan, and Mark O. Riedl. Procedural level generation for mixed reality games. In *Proceedings of the 2016 AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*, 2016.

[2] Matthew Guzdial and Mark O. Riedl. Intelligent level design editor. Demo at the 2nd Workshop on Experimental AI in Games, November 2015. http://guzdial.com/exag2015.html.

[3] Boyang Li and Mark O. Riedl. Scheherazade: Crowd-powered interactive narrative generation. In *Proceedings of the 29th AAAI Conference on Artificial Intelligence*, 2015.

[4] Mark O. Riedl, Ken Hartsook, Sauvik Das, Alexander Zook, and Boyang Li. Game Forge: An intelligent system that generates computer role playing games. In *Association for the Advancement of Artificial Intelligence, Video Competition*, July 2011.

[5] Chinmay Barve, Sanjeet Hajarnis, Sanjeet Karnik, and Mark O. Riedl. WeQuest: A mobile alternate reality gaming platform and intelligent end-user authoring tools. In *Proceedings of the 6th Annual Conference on Artificial Intelligence for Interactive Digital Entertainment Conference*, Palo Alto, California, October 2010.

[6] Mark O. Riedl, Andrew Stern, and Don Dini. Mixing story and simulation in interactive narrative. In *Proceedings of the 2nd Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE)*, Marina Del Rey, California, June 2006.

[7] R. Michael Young and Mark O. Riedl. Towards an architecture for intelligent control of narrative in interactive virtual worlds. In *Proceedings of the 2003 International Conference on Intelligent User Interfaces*, Miama, Florida, January 2003.

D.8. Invited Conference and Workshop Presentations

[1] Human-centered artificial intelligence. Invited Talk at the 2017 AAAS Annual Meeting of the Religious News Association, September 2017.

[2] Toward socio-cultural machine learning. Invited Talk at the National Academies of Science Workshop on Intelligent Machine Analysis, August 2017.

[3] Human-centered artificial intelligence. Invited Talk at the 2017 YConf, June 2017.

[4] Human-centered artificial intelligence. Invited Talk at the 2017 Stamps Scholars Conference, April 2017.

[5] The great automatic grammatizator. Invited Talk at the 2017 VOR Conference: "Superintelligence", February 2017.

[6] Learning from stories: Making ai programming accessible. Invited Talk at the 2017 AI With the Best Conference, September 2016.

[7] What artificial intelligence is and isn't: Programming creativity. Invited Talk at the 2016 Science Writers Conference, October 2016.

[8] Computational narrative intelligence and the quest for human-centered ai. Invited Talk at the 2016 Nucl.ai Conference, July 2016.

[9] Computational narrative and machine enculturation. Invited Talk at the 2016 Brain Inspired Computational Architecutres Workshop on Computational Models of Narrative, July 2016.

[10] Why computer should read and write stories. Invited Talk at the UCLA Institute for Pure and Applied Mathematics, Workshop on Cultural Analytics, Los Angeles, April 2016.

[11] Learning from stories: Training virtual agents in games and simulations. Invited Talk at the 2016 Information Theory and Applications Workshop, San Diego, February 2016.

[12] Intelligent narrative generation: Creativity and cognition. Invited Talk at the 2015 Information Theory and Applications Workshop, San Diego, February 2015.

[13] Automated generation of fictional stories. Invited talk at the ECCV workshop on Storytelling with Images and Videos, September 2014.

[14] Unlocking human creativity. Invited talk at TEDxPeachtree, November 2013.

[15] Intelligent narrative generation. Invited Talk at the International Workshop on Perspectives of Information Technology, National Tsing Hua University, Taiwan, May 2013.

[16] Interactive narrative: A novel application of artificial intelligence for computer games. Invited Talk at the 26th AAAI Conference on Artificial Intelligence, July 2012.

[17] Interactive social stories for young adults with high-functioning autism spectrum disorders. Invited Talk at the 2011 Conference on the State of the Science on Work Accommodations, 2011.

[18] Just-in-time procedural content generation of game plots. Invited Talk at the 2011 East Coast Game Conference, April 2011.

[19] Experience management through narrative content generation. Invited Talk at the UC Santa Cruz Procedural Content Generation Symposium, October 2009.

[20] Intelligent narrative computing: Creativity, sense-making, and engagement. Invited Talk at the 3rd International Colloquium in Creativity, Cognition and Computers, Universidad Autónoma Metropolitana, México City, México, 2008.

[21] Intelligent experience management for virtual worlds. Invited Talk at the TCS Innovation Labs Workshop on Virtual Reality and its Applications to Enterprises, Delhi, India, 2008.

[22] Emergent and guided narrative for training and education in virtual worlds. Invited Talk at the Workshop on Intelligent Tutoring in Serious Games, 2006.

[23] Automated story generation: Balancing plot and character. Invited Talk at Believable Characters Workshop, 2006.

D.9. Invited Talks

[1] Mark Riedl. Computational narrative intelligence. Invited Talk at Rennslayer Polytechnial Institute, Department of Cognitive Science, Troy, New York, October 2017.

[2] Mark O. Riedl. Computational narrative intelligence. Invited Talk at Vanderbilt University, Department of Computer Science, Nashville, Tennessee, September 2017.

[3] Computational narrative intelligence. Invited Talk at Drexel University, Department of Computer Science, Philadelphia, Pennsylvannia, May 2016.

[4] Computational narrative intelligence. Invited Talk at Florida State University, Department of Computer Science, Tallahassee, Florida, March 2016.

[5] Intelligent narrative generation. Invited Talk at Disney Research, Pittsburgh, November 2014.

[6] Procedural game generation for serious applications. Invited Talk at ACT, August 2014.

[7] Intelligent narrative generation: Creativity, engagement, and cognition. Invited Talk at Goldsmiths University, March 2014.

[8] The science and art of storytelling. Invited Talk at NSF I-Corps Program Meeting, December 2013.

[9] Intelligent narrative generation: Creativity, engagement. and cognition. Invited talk at the Naval Research Lab, Navy Center for Applied Research in Artificial Intelligence (NCARAI) Symposia Series, December 2013.

[10] New frontiers in interactive narrative. Invited Talk at the Instituto de Engenharia de Sistemas e Computadores - Investigacao e Desenvolvimento (INESC-ID), Instituto Superior Tecnico, Lisbon, Portugal, June 2013.

[11] Intelligent narrative generation: Creativity, engagement, and cognition. Invited Talk at Northwestern University, Computer Science Department, May 2013.

[12] Intelligent narrative generation: Creativity, engagement, and cognition. Invited Talk at Columbia University, Computer Science Department, April 2013.

[13] Intelligent narrative generation: Creativity, engagement, and cognition. Invited Talk at University of Texas, Computer Science Department, April 2013.

[14] Intelligent narrative generation: Creativity, engagement, and cognition. Invited Talk at University of Washington, Computer Science and Engineering, April 2013.

[15] Intelligent narrative generation: Creativity, engagement, and cognition. Invited Talk at Brown University, Computer Science Department, March 2013.

[16] Intelligent narrative generation: Creativity, engagement, and cognition. Invited Talk at University of Southern California, Computer Science Department, February 2013.

[17] Intelligent narrative generation: Creativity, engagement, and cognition. Invited Talk at University of Michigan, Electrical Engineering and Computer Science Department, February 2013.

[18] Intelligent narrative generation: Creativity, engagement, and cognition. Invited Talk at Soar Technologies, February 2013.

[19] Intelligent narrative generation: Creativity, engagement, and cognition. Invited Talk at Georgia Institute of Technology, GVU Center Brownbag Series, February 2013.

[20] Intelligent narrative generation: Creativity, engagement, and cognition. Invited Talk at University of Alberta, Computing Science Department, January 2013.

[21] Intelligent narrative generation: Creativity, engagement, and cognition. Invited Talk at North Carolina State University, Computer Science Department, November 2012.

[22] The science and art of storytelling. Invited Talk at NSF I-Corps Program Meeting, November 2012.

[23] The science and art of storytelling. Invited Talk at NSF I-Corps Program Meeting, August 2012.

[24] Automated narrative reasoning for training adaptive leaders and warfighters. Invited Research Spotlight Talk at DARPA Young Faculty Award Program Meeting, July 2012.

[25] Intelligent narrative computing. Invited Talk at DARPA Narrative Networks Program Meeting, April 2012.

[26] Intelligent narrative generation: Creativity, sense-making, and engagement. Invited Talk at Massachusetts Institute of Technology, Media Lab, August 2011.

[27] Intelligent narrative computing: Creativity, sense-making, and engagement. Invited Talk at IT University of Copenhagen, November 2008.

[28] Intelligent narrative computing: Creativity, sense-making, and engagement. Invited Talk at Georgia Institute of Technology, GVU Center Brownbag Series, 2008, 2008.

[29] Artificial intelligence and narrative. Invited Talk at University of Southern California, School of Occupational Therapy, 2007.

[30] Narrative generation and interactive storytelling. Invited Talk at University of Southern California, Department of Computer Science, 2007.

[31] Narrative generation and interactive storytelling. Invited Talk at University of North Carolina, Charlotte, 2006.

[32] Narrative generation for interactive storytelling. Invited Talk at Charles River Analytics, Cambridge, Massachusetts, 2006.

D.10. Invited Panels

[1] The future of artificial intelligence in legal education, research and practice. nvited Panel at the 2016 CALI Conference for Law School Computing, 2016.

[2] Panel on computational storytelling. Invited Panel at the Columbia University School of Journalism, March 2014.

[3] Panel on the near future of interactive narrative technologies. Invited Panel at the 5th Workshop on Intelligent Narrative Technologies (Panelist), October 2012.

[4] Panel on the future of intelligent narrative technologies. Invited Panel at the 4th Workshop on Intelligent Narrative Technologies (Panelist), October 2011.

[5] Panel on game ai education. Invited Panel at the 6th AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (Chair), October 2010.

[6] Panel on camera control. Invited Panel at the Southern Interactive Entertainment and Game Expo (Panelist), 2010.

[7] Embodiment in virtual health interaction. Invited Panel at the AAAI Fall Symposium on Virtual Health Interaction (Chair), November 2009.

[8] Panel on the future of procedural content generation. Invited Panel at the UC Santa Cruz Procedural Content Generation Symposium (Panelist), October 2009.

[9] Issues in narrative and story for interactive entertainment. Invited Panel at the 2nd International Conference on Intelligent Technologies for Interactive Entertainment (Chair), January 2008.

[10] Panel on computer models of narrative improvisation. Invited Panel at the 3rd International Colloquium in Creativity, Cognition and Computers (Panelist), 2008.

[11] Panel on AI and storytelling. Invited Panel at the Joint Advances in Distance Learning Co-Lab Implementation Fest (Panelist), 2005.

E. Other

E.1. Invited Demonstrations

[1] The Scheherazade system. Invited Demo at the DARPA Social Simulation Interaction Modules PI Meeting, 2012.

[2] ShowMe: Persuasive narrative animation. Invited Demo at the DARPA Negotiate Across Cultures Workshop, 2010.

[3] Little Red Riding Hood: Automated story authoring for interactive storytelling systems. Invited Demo at the TIDSE'06 Little Red Cap Demo Workshop: The Authoring Process in Interactive Storytelling, 2006.

E.2. Technical Reports

[1] Mark O. Riedl. Equivalence between narrative mediation and branching story graphs (technical report tr04-004). Technical report, Liquid Narrative Group, Department of Computer Science, North Carolina State University, 2004.

[2] Mark O. Riedl. Actor Conference: Character-focused narrative planning (technical report tr03-00). Technical report, Liquid Narrative Group, Department of Computer Science, North Carolina State University, 2003.

E.3. Book Chapters

[1] Brian O'Neill and Mark O. Riedl. Emotion-driven narrative generation. In Georgios Yannakakis and Kostas Karpouzis, editors, *Emotion in Games–Theory and Practice*. Springer, 2015.

[2] M.O. Riedl and R. Michael Young. The importance of narrative as an affective instructional strategy. In *Design Recommendations for Adaptive Intelligent Tutoring Systems: Adaptive Instructional Strategies*, volume 2. Army Science Lab, 2014.

[3] Yun-Gyung Cheong, Mark Riedl, Byung-Chull Bae, and Mark J. Nelson. Planning with applications to quests and story. In Noor Shaker, Julian Togelius, and Mark J. Nelson, editors, *Procedural Content Generation in Games*. Springer, 2014.

[4] Boyang Li and Mark O. Riedl. Creating customized game experiences by leveraging human creative effort: A planning approach. In Frank Dignum, editor, *Agents for Games and Simulations*. Springer, 2010.

[5] Mark O. Riedl, David Thue, and Vadim Bulitko. Game AI as storytelling. In Pedro González-Calero, editor, *Applied Research in Artificial Intelligence for Computer Games*. Springer, 2010.

E.4. Other Magazine Articles

[1] Mark O. Riedl, Gita Reese Sukthankar, Arnav Jhala, Jichen Zhu, Santiago Villar Ontanon, Michael Buro, and David Churchill. Recap of the eighth aaai conference on artificial intelligence and interactive digital entertainment. *AI Magazine*, 34(1):87–89, 2013.

[2] Vadim Bulitko, Mark O. Riedl, Arnav Jhala, Michael Buro, and Nathan Sturtevant. Recap of the seventh AAAI conference on artificial intelligence and interactive digital entertainment. *AI Magazine*, 33(1):51–54, 2012.

E.5. Software

E.5.1 *GameTailor*. The GameTailor system uses temporal collaborative filtering to learn to predict players' skills against various types of opponents in a computer game. When given a target level of difficulty over time, GameTailor uses the skill predictions to select opponents that will result in the desired amount of difficulty. This work is a generalization of dynamic difficulty adjustment called *Challenge Tailoring*. GameTailor was licensed to the Army Research Lab, Simulation and Training Technology Center.

E.5.2 *Scheherazade*. The Scheherazade system automatically generates playable interactive fictions about common situations. The system uses crowdsourcing to collect a number of stories about a common situation, such as going to a restaurant, going to a movie theatre, or robbing a bank. These stories are used to create a model of the situation that can be interactively executed. Scheherazade has broad applicability, including entertainment, training, and intelligence. The was highlighted by a DARPA Program Manager in a Broad Agency Announcement on Vetting Commodity IT Devices.

E.5.3 *Comicbot*. An intelligent system based on *Cambot* that automatically composes a graphic novel based on a set of high level specifications about composition and dialogue. Comicbot was licensed to Aptima and incorporated into an authoring tool for military training scenarios, developed as part of a Phase III deliverable to the DOD.

E.5.4 *WeQuest*. A suite of technologies enabling mobile geo-location based alternate reality gaming. An alternate reality game (ARG) uses storytelling to immerse the player in a fictional environment superimposed over the real world. Mobile geo-location ARGs use geo-location on mobile devices so that the game plays out in the physical world. WeQuest includes a game engine for mobile devices that can play quests and stories and an end-user authoring too that enables users to create and share new quests and stories. To facilitate sharing, an *intelligent location translation* system adapts end-user authored stories written for one city to be played in another city. WeQuest is currently in use by researchers at Heriot-Watt University and Sussex University.

E.5.5 *Cambot*. An intelligent system that acts as a "virtual movie director." Given a script, Cambot automatically coordinates camera and animated avatars in a virtual world in order to cinematically aesthetically shoot the script. Cambot has been made available to the research community at large (free for download) and has been used in at least one other research project at Aptima.

E.5.6 *Automated Story Director*. A framework for developing interactive narratives for entertainment, education, or training. An interactive narrative system manipulates computer-controlled characters in a virtual world in order to coerce a user's interactive experience to conform to a set of aesthetic or pedagogical parameters. The framework is manifested in two prototype systems: *IN-TALE* (Interactive Narrative Tacit Adaptive Leader Experience), a military leadership training system, and an entertainment application roughly based on the story of Little Red Riding Hood. The Automated Story Director framework has been distributed to various research groups around the world.

E.5.7 *Fabulist*. A story generation system. Fabulist implements the *IPOCL* plot generation algorithm that reasons about character believability and logical causal progression during content generation. Fabulist integrates the *IPOCL* plot generation algorithm with a discourse planner and a template-based natural language generator.

F. Research Honors and Awards

- Invited to participate in the Aspen Institute Panel on the Future of Artificial Intelligence, August 2016.
- **Second Best Paper**, Matthew Guzdial and Mark O. Riedl. Learning to Blend Computer Game Levels. Proceedings of the 7th International Conference on Computational Creativity, 2016.
- **Jim Edenfield Faculty Fellowship**, 2016.

- **Nomination for Best Paper Award**, Alexander Zook, Brent Harrison, and Mark O. Riedl. Monte-carlo tree search for simulation-based play strategy analysis. In Proceedings of the 2015 Conference on the Foundations of Digital Games.
- **Exemplary paper**, Alexander Zook, Eric Fruchter, and Mark Riedl. Automatic Playtesting for Game Parameter Tuning via Active Learning. Proceedings of the 9th International Conference on the Foundations of Digital Games, 2014.
- **NSF CAREER Award**, 2013.
- **Best Reviewer** at the AI and Interactive Digital Entertainment Conference, 2013.
- **Google Faculty Award**, 2013.
- **Research recognized in a DARPA Web Feature**, `http://www.darpa.mil/NewsEvents/Releases/2013/05/14.aspx`, May 14 2013.
- **Georgia Tech College of Computing Outstanding Junior Faculty Award**, 2012.
- **DARPA Young Faculty Award**, 2011. The DARPA YFA program has a 9% acceptance rate.
- **Best Student Paper Award**, Nicholas Davis, Boyang Li, Brian O'Neill, Mark Riedl, and Michael Nitsche. Distributed Creative Cognition In Digital Filmmaking. Proceedings of the 8th ACM Conference on Creativity and Cognition, 2011.
- **Nomination for Most Innovative project**, Mark Riedl, Alexander Zook, Ken Hartsook, Sauvik Das, Dallas McCall. AAAI 2011 Video Competition.
- **Nomination for Best Paper Award**, Alexander Zook, Brian Magerko, and Mark Riedl. Formally Modeling Pretend Play. Proceedings of the 8th ACM Conference on Creativity and Cognition.
- **Nomination for Outstanding Paper Award**, Brian O'Neill and Mark Riedl. Toward a Computational Framework of Suspense and Dramatic Arc. Proceedings of the 4th International Conference on Affective Computing and Intelligent Interaction.
- **Best Reviewer** at the AI and Interactive Digital Entertainment Conference, 2010.
- **Distinguished Contribution Award**, Mark O. Riedl, Rosa Arriaga, Fatima Boujarwah, Hwajung Hong, Jackie Isbell, and L. Juane Heflin (2009). Toward Assisted Authoring of Social Skill Scenarios for Young Adults with High Functioning Autism. Proceedings of the IJCAI 2009 Workshop on Intelligent Systems for Assisted Cognition.
- **Best Paper Award**, Mark O. Riedl and Jonathan P. Rowe and David K. Elson (2008). Toward Intelligent Support of Authoring Machinima Media Content: Story and Visualization. Proceedings of the 2nd International Conference on Intelligent Technologies for Interactive Entertainment (INTETAIN).
- **Best Paper Award**, Mark O. Riedl and Andrew Stern (2006). Believable Agents and Intelligent Story Adaptation for Interactive Storytelling. Proceedings of the 3rd International Conference on Technologies for Interactive Digital Storytelling and Entertainment (TIDSE).
- **Best Paper Award**, Mark O. Riedl and Andrew Stern (2006). Believable Agents and Intelligent Scenario Direction for Social and Cultural Leadership Training. Proceedings of the 15th Conference on Behavior Representation in Modeling and Simulation (BRIMS).

III. Service

A. Professional Activities

A.1. Memberships and Activities in Professional Societies

- Association for the Advancement of Artificial Intelligence (AAAI)
- Association for Computing Machinery (ACM)
- ACM Special Interest Group on Artificial Intelligence (SIGART)

A.2. Journal Reviewing Activities

- **Reviewer**, PLOS ONE, 2014
- **Reviewer**, IEEE Transactions on Computational Intelligence and Artificial Intelligence in Games, 2009-present
- **Reviewer**, ACM Transactions on Interactive Intelligent Systems, 2011-present
- **Reviewer**, AI Magazine, 2012.
- **Reviewer**, IEEE Transactions on Graphics, 2012.
- **Reviewer**, Journal of Artificial Intelligence Research, 2011
- **Reviewer**, AI Magazine, Special Issue on Computational Creativity, 2009
- **Reviewer**, IEEE Transactions of Visualization and Computer Graphics, 2007
- **Reviewer**, Connection Sciences, 2007
- **Reviewer**, Journal of Virtual Reality and Broadcasting, 2006
- **Reviewer**, New Generation Computing, 2006
- **Reviewer**, IEEE Journal of Computer Graphics and Animations, 2006

A.3. Conference Organization Activities

- **Co-Chair**, AAAI Cognitive Systems Track, 2017.
- **General Conference Chair**, International Conference on AI for Interactive Digital Entertainment (AIIDE), 2012.
- **Program Committee Chair**, International Conference on AI for Interactive Digital Entertainment (AIIDE), 2011.
- **General Co-Chair**, Conference on Advances in Cognitive Systems (ACS), 2015.
- **General Co-Chair**, International Conference on Interactive Digital Storytelling (ICIDS), 2010.
- **Chair**, AAAI Workshop on AI and Fun: Research Directions, 2010.
- **Co-chair**, Workshop on Intelligent Narrative Technologies III, 2010.
- **Founder and Co-chair**, AAAI Fall Symposium on Interactive Narrative Technologies, 2007.

- **Chair**, International Conference on Artificial Intelligence in Education (AIED) Workshop on Narrative Learning Environments, 2007.
- **Organizing Committee**, International Conference on AI for Interactive Digital Entertainment (AIIDE), 2010.
- **Organizing Committee**, International Conference on Intelligent Virtual Agents (IVA), 2006.
- **Organizing Committee**, International Conference on Automated Planning and Scheduling (ICAPS) Workshop on AI Planning for Computer Games and Synthetic Characters, 2006.
- **Senior Advisor**, Workshop on Intelligent Narrative Technologies, 2009–present.
- **Senior Advisor**, Workshop on Collaborative Human/AI Control for Interactive Experiences (At the International Joint Conference on Autonomous Agents and Multi Agent Systems), 2010.

A.4. Conference Committee Activities

- **Senior Program Committee**, International Joint Conference on Artificial Intelligence (IJCAI), 2016, 2017.
- **Senior Program Committee**, International Conference on the Foundations of Digital Games (FDG), 2014.
- **Senior Program Committee**, International Joint Conference on Autonomous Agents and Multi Agent Systems (AAMAS), 2011–2013, 2015.
- **Senior Program Committee**, International Conference on Intelligent Virtual Agents (IVA), 2010–2012.
- **Program Committee**, Joint International Conference on Interactive Digital Storytelling (formerly TIDSE and ICVS), 2008, 2009, 2011, 2015.
- **Program Committee**, International Joint Conference on AI (IJCAI), Special Track on AI and the Arts, 2015.
- **Program Committee**, National Conference on Artificial Intelligence (AAAI), 2006, 2007, 2010, 2012–2016.
- **Program Committee**, International Conference on Intelligent User Interfaces (IUI), 2009, 2010, 2014.
- **Program Committee**, International Joint Conference on Autonomous Agents and Multi Agent Systems (AAMAS), 2008, 2009, 2014.
- **Program Committee**, International Joint Conference on AI (IJCAI), 2011, 2013.
- **Program Committee**, National Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE), 2006–present.
- **Program Committee**, International Conference on the Foundations of Digital Games (FDG), 2010–present.
- **Program Committee**, International Conference on Intelligent Virtual Agents (IVA), 2006, 2007, 2008, 2009, 2013, 2014.
- **Program Committee**, IEEE Conference on Computational Intelligence and Games (CIG), 2010, 2011, 2013, 2014.

- **Program Committee**, International Conference on Computational Creativity (ICCC), 2010–present.
- **Program Committee**, Digital Games Research Association Conference (DiGRA), 2013.
- **Program Committee**, Ibero-American Conference on Artificial Intelligence, 2012.
- **Program Committee**, ACM International Conference on Creativity and Cognition, 2011.
- **Program Committee**, International Conference on Intelligent Technologies for Interactive Entertainment (INTETAIN), 2008, 2009.
- **Program Committee**, Australiasian Conference on Interactive Entertainment (IE), 2005, 2006, 2007, 2008.
- **Program Committee**, Annual Conference of the Florida Artificial Intelligence Research Society (FLAIRS), 2008.
- **Program Committee**, International Conference on Virtual Storytelling, (ICVS), 2007.
- **Program Committee**, International Conference on Entertainment Computing (ICEC), 2006.
- **Reviewer**, International Conference on Human Factors in Computing Systems (CHI), 2001, 2009, 2010, 2013.
- **Reviewer**, SIGGRAPH, 2008.
- **Reviewer**, International Joint Conference on Artificial Intelligence (IJCAI), 2007.
- **Reviewer**, International Conference on Advances in Computer Entertainment Technology (ACE), 2006.
- **Reviewer**, ACM Symposium on User Interface Software and Technology (UIST), 2004.

A.5. Workshop and Other Committee Activities

- **Program Committee**, Workshop on Experimental AI in Games, 2014, 2015.
- **Program Committee**, Workshop on Intelligent Narrative Technologies, 2011–present.
- **Program Committee**, AAAI Workshop on Intelligent Cinematography And Editing, 2014
- **Program Committee**, AISB Symposium on AI and Games, 2014.
- **Program Committee**, Workshop on Games and Natural Language Processing, 2013, 2014.
- **Program Committee**, AIIDE Workshop on AI and Game Aesthetics, 2013.
- **Program Committee**, Workshop on Planning in Games (At the International Conference on Automated Planning and Scheduling), 2010, 2013.
- **Program Committee**, AI and Interactive Digital Entertainment Doctoral Consortium, 2012.
- **Program Committee**, ICCBR Workshop on StoryCase: Stories, Episodes, and Cases, 2012.
- **Program Committee**, AAAI Spring Symposium on AI and Health Communication, 2011.
- **Program Committee**, IJCAI AI Video Competition, 2009, 2010.
- **Program Committee**, International Joint Workshop on Computational Creativity, 2008.

- **Program Committee**, Australasian Workshop on Computational Creativity, 2009.
- **Program Committee**, International Conference on AI and Education (AIED), Workshop on Intelligent Educational Games, 2009.
- **Program Committee**, European Conference on Artificial Intelligence (ECAI), Workshop on Integrating Embodied Conversational Agents with Speech and Advanced Dialogue Modeling, 2008.
- **Program Committee**, International Conference on Intelligent Technologies for Interactive Entertainment (INTETAIN) Workshop on Integrating Technologies for Interactive Stories (ITIS), 2008.
- **Program Committee**, Workshop on Agent Based Systems for Human Learning and Entertainment (ABSHLE), 2007.
- **Program Committee**, Annual Simulation Symposium, 2006.
- **Reviewer**, International Conference on the Foundations of Digital Games (FDG), Doctoral Consortium, 2011, 2012.

B. On-Campus Georgia Tech Committees

1. Member, School Advisory Committee, 2015–present.
2. Intelligent Systems area coordinator, 2014–present.
3. Member, Computer Science Undergraduate Curriculum Committee, 2011–present.
4. Member, Computational Media Curriculum Committee, 2008–present.
5. Member, GVU Steering Committee, 2009–2013.
6. Member, Institute Undergraduate Curriculum Committee, 2013–2014.
7. Member, Strategic Planning Committee, School of Interactive Computing, 2012–2013.
8. School of Interactive Computing Strategic Planning Committee, 2012.
9. MSCS Area Coordinator (Interactive Intelligence), 2011.
10. Member, Interactive Computing and CoC Award Committees, 2008–2010.
11. Member, HCC PhD Admissions Committee, 2008–2009.

C. Member of Ph.D. Examining Committees

1. Josep Valls, Drexel University, 2017.
   Thesis Title: TBD
   Principal Advisor: Santiago Ontanon
2. Adam Summerville, University of California, Santa Cruz, TBD.
   Thesis Title: TBD
   Principal Advisor: Michael Mateas
3. Yang-feng Ji, School of Interactive Computing, Georgia Tech, 2016.
   Thesis Title: TBD
   Principal Advisor: Jacob Eisenstein

4. Richard Zhao, University of Alberta, 2015.
   Thesis Title: TBD
   Principal Advisor: Duane Szafron

5. Kaushik Subramanian, School of Interactive Computing, Georgia Tech, Expected 2015.
   Thesis Title: Human-guided Exploration for Efficient Reinforcement Learning
   Principal Advisor: Charles Isbell and Andrea Thomaz

6. Bryan Wiltgen, School of Interactive Computing, Georgia Tech, Expected 2015.
   Thesis Title: TBD
   Principal Advisor: Ashok Goel

7. Nicholas Davis, School of Interactive Computing, Georgia Tech, Expected 2017.
   Thesis Title: TBD
   Principal Advisor: Ellen Do

8. Alexander Shoulson, University of Pennsylvannia, 2014.
   Thesis Title: TBD
   Principal Advisor: Norm Bader

9. Arya Irani, School of Interactive Computing, Georgia Tech, 2014.
   Thesis Title: Utilizing Negative Policy Information to Accelerate Reinforcement Learning
   Principal Advisor: Charles Isbell

10. Stephen Ware, North Carolina State University, 2014.
    Thesis Title: Searching the Space of Complete Stories for Ideal Narrative Conflicts
    Principal Advisor: Michael Young

11. Rui Figueiredo, Universidade Técnica de Lisboa, 2013.
    Thesis Title: Persuasion in Interactive Storytelling
    Principal Advisor: Ana Paiva

12. Jeff Orkin, Media Lab, Massachusetts Institute of Technology, 2013.
    Thesis Title: Collective Artificial Intelligence: Simulated Role-Playing from Crowdsourced Data
    Principal Advisor: Deb Roy

13. Fatima Boujarwah, School of Interactive Computing, Georgia Tech, 2012.
    Thesis Title: Facilitating the Authoring of Multimedia Social Problem Solving Skills Instructional Modules
    Principal Advisor: Gregory Abowd

14. Peng Zang, School of Interactive Computing, Georgia Tech, 2011.
    Thesis Title: Scaling Solutions to Markov Decision Problems
    Principal Advisor: Charles Isbell

15. Manish Mehta, School of Interactive Computing, Georgia Tech, 2011.
    Thesis Title: Construction and Adaptation of AI Behaviors in Computer Games
    Principal Advisor: Ashwin Ram

16. David Roberts, School of Interactive Computing, Georgia Tech, 2010.
    Thesis Title: Computational Techniques for Reasoning about and Shaping Player Experiences in Interactive Narratives
    Principal Advisor: Charles Isbell

17. Federico Peinado, Universidad Complutense de Madrid, 2008.
Thesis Title: Un Armazón para el Desarrollo de Aplicaciones de Narración Automática basado en Componentes Ontológicos Reutilizables
Principal Advisor: Pablo Gervas (Note: Backup examiner)

18. Shumin Wu, Department of Computer Science, University of Southern California, 2007.
Thesis Title: Reducing Unproductive Learning Activities in Serious Games for Second Language Acquisition
Principal Advisor: Lewis Johnson

D. Ph.D. Qualifying Exams

1. Michael Pettinati, College of Computing, Georgia Tech, Spring 2015.
Principal Advisor: Ron Arkin.

2. Tesca Fitzgerald, College of Computing, Georgia Tech, Spring 2015.
Principal Advisor: Andrea Thomaz.

3. Mikhail Jacob, College of Computing, Georgia Tech, Spring 2015.
Principal Advisor: Brian Magerko.

4. Justin Permar, College of Computing, Georgia Tech, Spring 2014.
Principal Advisor: Brian Magerko.

5. Kristin Siu, College of Computing, Georgia Tech., Spring 2014.
Principal Advisor: Mark Riedl.

6. Ashley Edwards, College of Computing, Georgia Tech., Spring 2013.
Principal Advisor: Charles Isbell.

7. Hong Yu, College of Computing, Georgia Tech., Spring 2012.
Principal Advisor: Mark Riedl.

8. Kaushik Subramanian, College of Computing, Georgia Tech., Spring 2012.
Principal Advisor: Charles Isbell.

9. Nicholas Davis, College of Computing, Georgia Tech., Spring 2012.
Principal Advisor: Ellen Do.

10. Alexander Zook, College of Computing, Georgia Tech., Spring 2012.
Principal Advisor: Mark Riedl.

11. Boyang Li, College of Computing, Georgia Tech., Spring 2011.
Principal Advisor: Mark Riedl.

12. Bryan Wiltgen, College of Computing, Georgia Tech., Spring 2011.
Principal Advisor: Ashok Goel.

13. Keith McGreggor, College of Computing, Georgia Tech., Spring 2010.
Principal Advisor: Ashok Goel.

14. Fatima Boujarwah, College of Computing, Georgia Tech., Spring 2010.
Principal Advisor: Gregory Abowd.

15. Brian O'Neill, College of Computing, Georgia Tech., Fall 2009.
Principal Advisor: Mark Riedl.

16. Peng Zhou, College of Computing, Georgia Tech., Fall 2009.
Principal Advisor: Charles Isbell.

17. Maithilee Kunda, College of Computing, Georgia Tech., Fall 2008.
Principal Advisor: Ashok Goel.

18. Michael Helms, College of Computing, Georgia Tech., Fall 2008.
Principal Advisor: Ashok Goel.

E. Proposal Reviewing

- **Natural Sciences and Engineering Research Council (Canada)**, Discovery program, 2013.
- **Army Research Lab**, 2012.
- **National Science Foundation**, IGERT program, 2010.
- **National Science Foundation**, HCC program, 2008.

F. Consulting

- *UC San Francisco*. Consulting on an NSF EAGR, "Adolescents Learning Social Problem-Solving" Skills Using an Interactive Graphic Novel.", 2013-present.
- *Aptima*. Rapid training scenario authoring, 2011-present.
- *Walt Disney Imagineering*. AI Story management technologies, 2010-2011.
- *Intelligent Systems Technology, Inc*. Adaptive training technologies for the U.S. military, 2009.
- *Intelligent Systems Technology, Inc*. Storytelling-inspired, game-based simulation framework for human social and cultural behavior modeling, 2008.

IV. National and International Professional Recognition

A. Invited Conference Session Chair

1. AAAI Conference on AI and Interactive Digital Entertainment (AIIDE), 2009, 2010.
2. AAAI Spring Symposium on Intelligent Narrative Technologies II, 2009.
3. Joint International Conference on Interactive Digital Storytelling (formerly TIDSE and ICVS), 2008.
4. International Conference on Intelligent Technologies for Interactive Entertainment (INTETAIN), 2008.
5. International Conference on Technologies for Interactive Digital Storytelling and Entertainment (TIDSE), 2006.
6. International Conference on Intelligent Virtual Agents (IVA), 2006.

B. Articles and Publications by the Popular Media

- "AI Is Dreaming Up New Kinds of Video Games", *MIT Technology Review*, November 29, 2017. https://www.technologyreview.com/s/609482/ai-is-dreaming-up-new-kinds-of-video-game
- "A Year After Pledging Openness, Apple Still Falls Behind On AI", *BuzzFeed*, November 20, 2017. https://www.buzzfeed.com/daveyalba/apple-artificial-intellgence-race?utm_term=.bfOyV2repN#.mlbl2RZq4m
- "Artificial Intelligence Is Learning How To Develop Games", *Rolling Stone*, September 13, 2017. http://www.rollingstone.com/glixel/news/artificial-intelligence-is-learning-how
- "AI Re-creates 'Super Mario Bros.' Game Engine by Watching Gameplay Footage", *Digital Trends*, September 12, 2017. https://www.digitaltrends.com/computing/ai-super-mario-bros-g
- "AI System Accurately Replicates Video Games Just by Watching Them", *Seeker*, September 12, 2017. https://www.seeker.com/tech/artificial-intelligence/ai-system-reverse-engine
- "AI learns to re-create Super Mario Bros. by watching someone else play it", *The Verge*, September 10, 2017. https://www.theverge.com/2017/9/10/16276528/ai-video-games-game-engi
- "AI is so hot right now researchers are posing for Yves Saint Laurent", *The Verge*, August 31, 2017. https://www.theverge.com/tldr/2017/8/31/16234342/ai-so-hot-right-now-ysl-alexar
- "We need robots to have morals. Could Shakespeare and Austen help?" *The Guardian*, July 24, 2017. https://www.theguardian.com/commentisfree/2017/jul/24/robots-ethics-shakespe
- "How AI detectives are cracking open the black box of deep learning", *Science Magazine*, July 6, 2017. http://www.sciencemag.org/news/2017/07/how-ai-detectives-are-cracking-open-bl
- "Artificially intelligent painters invent new styles of art", *New Scientist*, June 29, 2017. https://www.newscientist.com/article/2139184-artificially-intelligent-painters-invent-new
- "Ethics And Creativity In Artificial Intelligence: An Interview With Mark Riedl", *Huffington Post*, June 1, 2017. http://www.huffingtonpost.com/entry/ethics-and-creativity-in-artifici us_593047b4e4b09e93d7964848
- "Has AI gone too far? DeepTingle turns El Reg news into terrible erotica", *The Register*, May 22, 2017. https://www.theregister.co.uk/2017/05/22/deeptingle_ai_transforms_writing/

- "Teaching Robots Right from Wrong", *1843 Magazine (The Economist)*, June/July 2017. https://www.1843magazine.com/features/teaching-robots-right-from-wrong
- "AI detective analyses police data to learn how to crack cases", *New Scientist*, May 10, 2017. https://www.newscientist.com/article/mg23431254-000-ai-detective-analyses-police-da
- "The Hidden Laborers Training AI to Keep Ads Off Hateful YouTube Videos", *Wired*, April 21, 2017. https://www.wired.com/2017/04/zerochaos-google-ads-quality-raters/
- "Will AI Create as Many Jobs as It Eliminates?", *MIT Sloan Management Review*, March 23, 2017. http://sloanreview.mit.edu/article/will-ai-create-as-many-jobs-as-it-eliminates
- "Alphabet's hate-fighting AI doesn't understand hate yet", *Quartz*, February 27, 2017. https://qz.com/918640/alphabets-hate-fighting-ai-doesnt-understand-hate-yet/
- "Kristen Stewart (yes, that Kristen Stewart) has co-authored a paper on AI", *Digital Trends*, January 20, 2017. http://www.digitaltrends.com/cool-tech/kristen-stewart-ai-project/
- "Kristen Stewart co-authored a paper on style transfer and the AI community lost its mind", *Tech Crunch*, January 19, 2017. https://techcrunch.com/2017/01/19/kristen-stewart-co-author
- "Kristen Stewart has co-authored a paper on artificial intelligence", *The Verge*, January 20, 2017. http://www.theverge.com/tldr/2017/1/20/14334242/kristen-stewart-machine-learnin
- "This AI translates its internal monologue for humans to understand—and plays Frogger", *Quartz*, January 19, 2017. https://qz.com/888529/this-ai-translates-its-internal-monologue
- "Universities' AI Talent Poached by Tech Giants", *The Wall Street Journal*, November 24, 2016. http://www.wsj.com/articles/universities-ai-talent-poached-by-tech-giants-1479
- "Has a Black Mirror episode predicted the future of video games?", *The Guardian*, October 26, 2016. https://www.theguardian.com/technology/2016/oct/26/black-mirror-episode-playtes
- "Video games where people matter? The strange future of emotional AI", *The Guardian*, October 12, 2016. https://www.theguardian.com/technology/2016/oct/12/video-game-characters-
- "Navy looking at teaching robots how to behave", *Stars and Stripes Newspaper*, August 14, 2016. http://www.stripes.com/news/navy-looking-at-teaching-robots-how-to-behave-1.423924
- "Can Artificial Intelligence Make Art?", *PBS Digital Studio's Idea Channel*, June 30, 2016. https://www.youtube.com/watch?v=Sbd4NX95Ysc
- "Better Research Through Video Games", *The New Yorker*, June 22, 2016. http://www.newyorker.com/tech/elements/better-research-through-video-games
- "'Quixote' Is Teaching Navy Robots How To Play Nice With Humans", *Popular Mechanics*, June 20, 2016. http://www.popularmechanics.com/technology/robots/a21406/quixote-navy-ro
- "Story Time: ONR Researchers Create 'Human User Manual? for Robots", *ONR Press Release*, June 15, 2016. http://www.onr.navy.mil/en/Media-Center/Press-Releases/2016/Quixote-Human-User-Manual-for-Robots.aspx
- "Artificial Intelligence Writes 'Sunspring? Sci-Fi Short Film Starring Thomas Middleditch", *Inquisitr*, June 14, 2016. http://www.inquisitr.com/3203954/artificial-intelligence-writes-s
- "OK Computer, Write Me a Song". *MIT Technology Review*, June 8, 2016. https://www.technologyreview.com/s/601642/ok-computer-write-me-a-song/

- "Google Unveils 'Artificial Creativity'". *Communications of the ACM News*, June 1, 2016. http://cacm.acm.org/news/203017-google-unveils-artificial-creativity/fulltext
- "Chatbots Can Create Characters, but Only Humans Can Tell Stories". *How We Get To Next.com*, May 25, 2016. https://howwegettonext.com/chatbots-can-create-characters-but-on .g3metxngp
- "Leggere le fiabe rende i robot molto piu uman". *La Repubblica*.
- "Here's How We Prevent the Next Racist Chatbot". *Popular Science*, March 24, 2016. http://www.popsci.com/heres-how-we-prevent-next-racist-chatbot
- "Robots that won't tilt at windmills". *CBC Spark*, March 20, 2016. http://www.cbc.ca/radio/spark/314-viruses-artificial-intelligence-and-more-1.3493593/robots-that-won-3493628
- "Behind a Computer's Surprise Victory, Hints of Global Economic Upheaval". *Chronicle of Higher Education*, March 14, 2016. http://chronicle.com/article/Behind-a-Computer-s-Surpris 235687/
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V. Other Contributions

- **Chair of Organizing Committee**, Games@GeorgiaTech initiative, which brings together faculty in four colleges interested in computer games as tools, education, and topics of research.
- **Member**, FutureMedia Fest organizing committee.