

Anne Sullivan

Curriculum Vitae

Expressive Intelligence Studio
Department of Computer Science
University of California, Santa Cruz
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EDUCATION

- 2012 (expected) Ph.D. Computer Science. University of California, Santa Cruz.
- 2008 M.S. Computer Science. University of California, Santa Cruz.
Thesis: *Integrating Drama Management into an Adventure Game*
Advisor: Michael Mateas
- 1996 B.A. Computer Science. University of California, Santa Cruz.

TEACHING EXPERIENCE

- 2010 **Lead Instructor**, COSMOS. Santa Cruz, CA.
California State Summer School for Mathematics and Science.
Structure of Fun: Science of Game Design
Taught a four week intensive class on game design for 19 high school students.
- 2007-2010 **Teaching Assistant**, University of California, Santa Cruz.
Foundations of Game Design (2007-2010) – Created lectures for weekly labs with a focus on accessibility for multiple learning styles.
Introduction to Computer Programming (2010) – Lectured based on student inquiries.
Virtual Worlds on the Web (2009) Gave lectures in lab sections, taught HTML, VRML and Flash.
- 2007, 2008 **Teaching Assistant**, COSMOS. Santa Cruz, CA.
California State Summer School for Mathematics and Science.
Technologies of Fun: Game Graphics, AI, and Network in Code
Worked closely with high school students to help them learn programming and create games using Python.

INDUSTRY EXPERIENCE

- 2005-2008 **Software Engineer**, Thuridion Software Engineering. Scotts Valley, CA.
Programmed Windows-based and internet applications for multiple clients.

- 2002 - 2005 **Computer Consultant**, Sullivan Consulting. Nipomo, CA.
Designed and implemented web solutions and computer service.
- 1998 – 2002 **Software Engineer**, Electronic Arts, Seattle. Bellevue, WA.
Developed artificial intelligence solutions, in-game tools, and user interface elements.
Shipped Titles: FIFA 99 PC and PSX, Need For Speed: High Stakes PC and PSX, Motor City Online PC.
- 1996 – 1998 **Software Engineer**, Thuridion Software Engineering. Scotts Valley, CA.
Programmed various Windows based applications for multiple clients.

JOURNAL ARTICLES

1. Anne Sullivan, Michael Mateas, Noah Wardrip-Fruin. Making Quests Playable: Choices, CRPGs, and the Grail Framework. To appear in *Leonardo Electronic Almanac*.

PEER-REVIEWED CONFERENCE PUBLICATIONS

1. Anne Sullivan, April Grow, Tabitha Chirrick, Max Stokols, Noah Wardrip-Fruin, Michael Mateas. Extending CRPGs as an Interactive Storytelling Form. To appear in *Proceedings of the The Fourth International Conference on Interactive Digital Storytelling (ICIDS 2011)*, Vancouver, Canada, November 28-December 1, 2011.
2. Aaron Reed, Ben Samuel, Anne Sullivan, Ricky Grant, April Grow, Justin Lazaro, Jennifer Mahal, Sri Kurniawan, Marilyn Walker, Noah Wardrip-Fruin. A Step Towards the Future of Role-Playing Games: The SpyFeet Mobile RPG Project. In *Proceedings of the Seventh AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE-11)*, Palo Alto, California, October 12-14, 2011.
3. Anne Sullivan, Gillian Smith. Lessons in Teaching Game Design. In *Proceedings of the 2011 International Conference on the Foundations of Digital Games (FDG 2011)*, Bordeaux, France, June 29 -July 1, 2011.
4. Aaron A. Reed, Ben Samuel, Anne Sullivan, Ricky Grant, April Grow, Justin Lazaro, Jennifer Mahal, Sri Kurniawan, Marilyn Walker, Noah Wardrip-Fruin. SpyFeet: An Exercise RPG. In *Proceedings of the 2011 International Conference on the Foundations of Digital Games (FDG 2011)*, Bordeaux, France, June 29 -July 1, 2011.
5. Adam Smith, Chris Lewis, Ken Hullett, Gillian Smith, Anne Sullivan. An Inclusive View of Player Modeling. In *Proceedings of the 2011 International Conference on the Foundations of Digital Games (FDG 2011)*, Bordeaux, France, June 29 -July 1, 2011.
6. Anne Sullivan, Michael Mateas, Noah Wardrip-Fruin. QuestBrowser: Making Quests Playable with Computer-Assisted Quest Design. In *Proceedings of the 8th Digital Art and Culture Conference (DAC 2009)*, Irvine, CA, December 12-15, 2009.
7. Anne Sullivan. 2009. Gender-inclusive quest design in massively multiplayer online role-playing games. In *Proceedings of the 4th International Conference on Foundations of Digital Games (FDG '09)*, FL, April 26-30, 2009. (Doctoral Consortium)

8. Jacob Telleen, Anne Sullivan, Jerry Yee, Prabath Gunawardane, Oliver Wang, Ian Collins, James Davis. Synthetic Shutter Speed Imaging. In *Computer Graphics Forum 26(3)*. Eurographics 2007.

PEER-REVIEWED WORKSHOP AND SYMPOSIUM PUBLICATIONS

1. Gillian Smith, Anne Sullivan. The Five Year Evolution of a Game Programming Course. To appear in *Proceedings of the 43rd ACM Technical Symposium on Computer Science Education (SIGCSE 2012)*. Raleigh, NC, February 29-March 3, 2012.
2. Anne Sullivan, Michael Mateas, and Noah Wardrip-Fruin. 2010. Rules of Engagement: Moving Beyond Combat-Based Quests. In *Proceedings of the Intelligent Narrative Technologies III Workshop (INT3 '10)* co-located with FDG 2010, Monterey, CA, June 18, 2010.
3. Anne Sullivan, Sherol Chen, Michael Mateas. From Abstraction to Reality: Integrating Drama Management into a Playable Game Experience. In *Proceedings of the AAAI 2009 Spring Symposium on Interactive Narrative Technologies II*, AAAI Press. Stanford, CA, March 23-25, 2009.
4. Sherol Chen, Mark Nelson, Anne Sullivan, Michael Mateas. Evaluating the Authorial Leverage of Drama Management. In *Proceedings of the AAAI 2009 Spring Symposium on Interactive Narrative Technologies II*, AAAI Press. Stanford, CA, March 23-25, 2009.

PEER-REVIEWED DEMOS

1. Anne Sullivan, Sherol Chen, Michael Mateas. Integrating Drama Management into an Adventure Game. In *Proceedings of the Fourth Annual Conference on Artificial Intelligence and Interactive Digital Entertainment*, AAAI Press. Stanford, CA, October 22-24, 2008.

CONFERENCE, WORKSHOP AND SYMPOSIUM PRESENTATIONS WITHOUT PROCEEDINGS

1. Sherol Chen, Anne Sullivan, Chris Lewis, Noah Wardrip-Fruin, Michael Mateas. Intelligent Interactive-Stories: Theory versus Practice. Poster at *Game Developer's Conference*, San Francisco, CA, March 23-27, 2009.

CONFERENCE PANEL PARTICIPATION

1. Girls, Games, and Getting to the First Day, *Grace Hopper Celebration of Women in Computing (GHC 2010)*, Atlanta, Georgia, September 28 – October 2, 2010.

NON PEER-REVIEWED PUBLICATIONS

1. Anne Sullivan. GrailGM: Moving Beyond Combat-Reliance in Role-Playing Games. To appear in *Proceedings of Grace Hopper Celebration of Women in Computing (GHC 2011)*, Portland, Oregon, November 9-12, 2011.

RESEARCH PROJECTS

GrailGM

My doctoral research involves GrailGM, an AI system designed to improve interactive storytelling and questing systems within computer role-playing games. GrailGM uses author-designed heuristics and player's past actions to dynamically choose plot points and create a story. GrailGM uses a tiered weighting

system to select a quest to offer the player. The tiers include hard constraints in the form of pre-conditions, softer constraints to maximize the player's exposure to available plot points, and author-defined preferences on quest type selection.

Mismanor

Mismanor is a social role-playing game, designed to test the capabilities of the GrailGM system. The game is a fantasy version of 1935, where the player has been invited to a dinner party at a manor by the daughter of the house. Depending on who the player chooses to interact with and help, they will see different storylines and receive different quests, all leading to one of 8 endings. The game includes a robust model of the game characters and player, as well as the relationships between them on various levels. The social state of the world can be modified based on the player's actions and characters' reactions. The quests and story are dynamically created using GrailGM, described above.

Quest Browser

QuestBrowser is a flex-based GUI interface that leverages the crowd-sourced common-sense database ConceptNet3 to find links between quest-related ideas. ConceptNet has a scoring mechanism for each link, and we use this score to narrow down the results along the conceptual path, as well as preferring certain link types. The user is given the option to change how much the scoring mechanism affects the results, and they are able to easily change which link types they are interested in seeing. The conceptual links can be used by quest designers to brainstorm quest ideas that follow common sense concepts but possibly fall outside normal quest tropes or move beyond personal bias or preference.

SpyFeet

SpyFeet is an augmented reality role-playing game, designed for the Android phone that aims to use compelling stories to encourage middle school girls to exercise. The story is a fantastical augmentation to reality, in which the player is able to see and converse with animal spirits by using their phone. The animals give the player physical quests which lead the player through an environmental mystery story. To tailor the system to different needs of each player, the quests and story needed to be dynamic to allow the player to choose which animal spirits they preferred, as well as tailor quest difficulty. The system supported dynamic story management that represents story events abstractly and allows story elements to be re-ordered in response to player choices, and dynamic dialog generation that allows a single story event to be revealed differently. My involvement on this project was primarily on the story team, helping design the dynamic story management as well as creating the non-linear story to work with the system.

EmPath

EmPath is a dungeon-style adventure game designed to use declarative optimization-based drama management (DODM). It uses a DODM system which reactively projects possible story paths through the game, giving a "goodness" score to each story path, based on author-specified heuristics. The DODM system is able to make a limited set of changes to the game world to help move the story towards the best possible path. Drama management can support a level of non-linearity in existing game genres that would be difficult to impossible to achieve using the traditional approach of scripting and local triggers. By using a traditional game genre we are able to directly compare the player's experience in the game with and without the DODM system active. EmPath was my master's project at UC Santa Cruz.

CONFERENCE AND WORKSHOP ORGANIZATION

1. Co-Chair, *Workshop on Research Prototyping for Games*, May 29, 2012, Raleigh, NC. Co-located with FDG 2012.
2. Program Committee, *The Fourth International Conference on Interactive Digital Storytelling (ICIDS 2011)*, November 28 –December 1, 2011, Vancouver, Canada.

3. Program Committee, *The Fourth Workshop on Intelligent Narrative Technologies (INT4)*, October 10-11, Palo Alto, California. Co-located with AIIDE 2011.
4. Reviewer, *Think Design Play: 5th Digital Games Research Association Conference (DiGRA)*, September 14 – 17 2011, Utrecht, The Netherlands.
5. Reviewer, *Second Workshop on Procedural Content Generation in Games*, June 28, 2011, Bordeaux, France. Co-located with FDG 2011.

JOURNAL REVIEWS

I've performed reviews of one or more articles for the following journals:
Computers in Entertainment (CIE)

AWARDS AND GRANTS

1. GHC Scholarship
Grace Hopper Celebration of Women in Computing, September 2010
2. GAANN Fellowship
University of California at Santa Cruz, 2007, 2010

PROFESSIONAL SOCIETIES

International Game Developers Association (IGDA)
Association for the Advancement of Artificial Intelligence (AAAI)
Association for Computing Machinery (ACM)

MEDIA COVERAGE

1. The Santa Cruz Video Game Revolution. Neal Soldofsky, Santa Cruz Weekly, 2010-12-14.
http://news.santacruz.com/2010/12/14/the_santa_cruz_video_game_revolution
2. An unexplored realm for dialogue research: Social role-playing games. Matthew Marge, Speech and Language Processing Technical Committee Newsletter, 2010-11-16.
<http://www.signalprocessingsociety.org/technical-committees/list/sl-tc/spl-nl/2010-11/social-role-playing-games/>
3. Meeting of the minds at UCSC Research Review Day. Tovin Lapan, The Santa Cruz Sentinel. 2010-10-22. http://www.santacruzsentinel.com/localnews/ci_16403890