Joseph C. Osborn

PhD Candidate, Computer Science
School of Engineering
University of California, Santa Cruz
(585) 705-6309
jcosborn@ucsc.edu

Education
2012–	Ph.D. in Computer Science, University of California, Santa Cruz
2009–2012	M.F.A in Interactive Media, University of Southern California
2004–2009	B.S. in Software Engineering and Computer Science (Double Major), Rochester Institute of Technology (RIT)

Fellowships & Scholarships
2012–2013	University of California Chancellor's Fellowship
2009–2011	USC Annenberg Fellowship
2004–2009	RIT Presidential Scholarship
2004–2009	National Merit Scholarship

Awards
2017	**Best Student Paper** Osborn, J. C., Lambrigger, B., and Mateas, M. (2017). HyPED: Modeling and Analyzing Action Games as Hybrid Systems. *Thirteenth Artificial Intelligence and Interactive Digital Entertainment Conference.*
2017	**Best Paper Honorable Mention** Osborn, J. C., Wardrip-Fruin, N., Mateas, M. (2017). Refining Operational Logics. *Foundations of Digital Games.*
2017	**Outstanding TA Award 2016-2017**
2015	**Best Paper Nomination** Osborn, J. C., Lederle-Ensign, D., Wardrip-Fruin, N., Mateas, M. (2015). Combat in Games. *Foundations of Digital Games.*
2011	**Best Presentation** Osborn, J. C., Sennott, M. (2011). Ensemble: Incremental character story generation for interactive media. *Third Annual Annenberg Graduate Fellowship Program Research and Creative Project Symposium.*
2010	**Student Showcase** van den Berg, L., van Hooren, M., Teunisse, B., Nishikawa, G., Farmer, S., Osborn, J. C. (2010). Paper Cakes. *Independent Games Festival 2010*

Employment
Fall 2017	Teaching Assistant, Computational Media 146 *Game AI*, University of California, Santa Cruz—Upper-division course in AI for game characters, game-playing, and game content generation
Summer 2017	Instructor, Computational Media 80K *Foundations of Video Game Design*, University of California, Santa Cruz—Introductory game design, development, and critique class; three different game-making tools in five weeks
Spring 2017	Teaching Assistant, Computer Science 211 *Combinatorial Algorithms*, University of California, Santa Cruz—Graduate-level coursework in linear programming, approximation algorithms, and second-order logic
Winter 2016	Teaching Assistant, Computational Media 176 *Game Systems*, University of California, Santa Cruz—Board game critique and design
Fall 2016	Teaching Assistant, Art and Design: Games and Playable Media 80I *Foundations of Play*, University of California, Santa Cruz—Physical/playground game design
Summer 2016	Instructor, Artificial Intelligence, Stanford Pre-Collegiate Studies Summer Institutes, Stanford, CA—AI survey in Python and Prolog
Summer 2016	Instructor, Computer Programming & Game Design, Stanford Pre-Collegiate Studies Honors Academy, Monterey, CA—Building 12 games in two weeks, culminating in Processing (Java)

Spring 2016	Teaching Assistant, Computer Science 120 *Game Development Experience*, University of California, Santa Cruz—Intermediate game programming course, taught in JavaScript
2015–2016	Research Assistant, GAMECIP Game Metadata Citation Project, University of California, Santa Cruz—Bridged C emulator cores and video transcoders with JavaScript UI
2013–2015	Research Assistant, CHEKOFV Crowd-Sourced Formal Software Verification Project, University of California, Santa Cruz—ActionScript programming connecting formal verification goals to citizen science games
2011–2012	Research Assistant, Annenberg Innovation Lab, University of Southern California —JavaScript multitouch interface prototyping and exploration
2010–2011	Research Assistant, Game Innovation Lab, University of Southern California— Lua game scripting in PlayStation Home online environment
2009–2010	Research Assistant, Institute for Creative Technologies, University of Southern California—Python multitouch interface prototyping and exploration
July 2008	Game Development Instructor, Kids on Campus (7-9 Graders), Rochester Institute of Technology—Teaching Game Maker to middle schoolers
2006–2007	Game Designer/Scripter, Vicarious Visions (Activision)—Created boss encounters and dynamic mission system using in-house tools (Spiderman 3 PSP/PS2/Wii)

Service

2017–2018	Chair, 2018 AAAI Workshop on Knowledge Extraction from Games (KEG18)
2017	Reviewer, IEEE Transactions on Computational Intelligence and Artificial Intelligence in Games (TCIAIG)
2017	Program Committee, Fourth Workshop on Experimental AI in Games (EXAG 2017)
2017	Program Committee, Workshop on Procedural Content Generation
2017	Program Committee, Foundations of Digital Games Game Analytics and Visualization Track
2016	Program Committee, Third Workshop on Experimental AI in Games (EXAG 2016)
2013–2014	UCSC Computer Science Department Graduate Student Council

Publications

Summerville, A., Martens, C., Harmon, S. Mateas, M., Osborn, J. C., Wardrip-Fruin, N., and Jhala, A. (2017). From Mechanics to Meaning. *IEEE Transactions on Computational Intelligence and AI in Games.* **Journal article**

Lowood, H., Kaltman, E., and Osborn, J. C. (2017). Screen Capture and Replay: Documenting Gameplay as Performance. In *Histories of Performance Documentation: Museum, Artistic, and Scholarly Practices*, Giannachi, G. and Westerman, J. (eds). Routledge. **Book chapter**

Osborn, J. C., Ryan, J., and Mateas, M. (2017). Analyzing Expressionist Grammars by Reduction to Symbolic Visibly Pushdown Automata. *Tenth International Workshop on Intelligent Narrative Technologies.*

Osborn, J. C., Samuel, B., Summerville, A., and Mateas, M. (2017). Towards General RPG Playing. *Fourth Workshop on Experimental AI in Games.*

Osborn, J. C., Lambrigger, B., and Mateas, M. (2017). HyPED: Modeling and Analyzing Action Games as Hybrid Systems. *Thirteenth Artificial Intelligence and Interactive Digital Entertainment Conference.* **Best Student Paper**

Osborn, J. C., Summerville, A., and Mateas, M. (2017). Automated Game Design Learning. *Thirteenth IEEE Conference on Computational Intelligence and Games.*

Osborn, J. C., Summerville, A., and Mateas, M. (2017). Automatic Mapping of NES Games with Mappy. *Workshop on Procedural Content Generation.*
Mappy was **featured on Slate**

Brogan, J. (2017). Meet Mappy, a Software System that Automatically Maps Old-School Nintendo Games. http://www.slate.com/blogs/future_tense/2017/08/16/mappy_automatically_maps_nes_levels.html

Osborn, J. C., Wardrip-Fruin, N., and Mateas, M. (2017). Refining Operational Logics. *Foundations of Digital Games.* **Best Paper Honorable Mention**

Kaltman, E., Osborn, J. C., and Wardrip-Fruin, N. (2017). Getting the GISST: A Toolkit for the Creation, Analysis and Reference of Game Studies Resources. *Foundations of Digital Games.*

Kaltman, E., Osborn, J. C., and Wardrip-Fruin, N. (2017). Game and Interactive Software Scholarship Toolkit (GISST). *Foundations of Digital Games Demonstrations Track.*

Summerville, A., Osborn, J. C., Holmgård, C., and Zhang, D. W. (2017). MARIO: Mechanics Automatically Recognized via Interactive Observation. *Foundations of Digital Games.*

Summerville, A., Osborn, J. C., and Mateas, M. (2017). CHARDA: Causal Hybrid Automata Recovery via Dynamic Analysis. *International Joint Conference on Artificial Intelligence (IJCAI).*

Osborn, J. C., Samuel, B., and Mateas, M. (2017). Visualizing the Strategic Landscape of Arbitrary Games. *SAGE Journal of Visual Analytics, Special Issue on Visual Game Analytics.* **Journal article**

Osborn, J. C., and Mateas, M. (2017). Evaluating a Solver-Aided Puzzle Design Tool. *First Workshop on Mixed-Initiative Co-Creative Interfaces (MICI).*

Osborn, J. C., and Mateas, M. (2017). Against Forward Models. *First Workshop on What's Next for AI in Games? (WNAIG).*

Martens, C., Summerville, A., Mateas, M., Osborn, J. C., Harmon, S., Wardrip-Fruin, N., and Jhala, A. (2016). Proceduralist Readings, Procedurally. *Workshop on Experimental AI in Games (EXAG).*

Fava, D., Shapiro, D., Osborn, J. C., Schaef, M., Whitehead, E. J. (2016). Crowd-Sourcing Program Preconditions via a Classification Game. *38th International Conference on Software Engineering.*

Osborn, J. C., Mateas, M. (2016). Programming Interactivity Requires Both Semantics and Semiotics. *POPL Off the Beaten Track Workshop, 43rd ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL).*

Osborn, J. C., Samuel, B., Mateas, M., Wardrip-Fruin, N. (2015). Playspecs: Regular Expressions for Game Play Traces. *Eleventh Artificial Intelligence and Interactive Digital Entertainment Conference.*

Osborn, J. C., Lederle-Ensign, D., Wardrip-Fruin, N., Mateas, M. (2015). Combat in Games. *Foundations of Digital Games.* **Best Paper Nomination**

Kahn, A. S., Shen, C., Lu, L., Ratan, R. A., Coary, S., Hou, J., Meng, J., Osborn, J. C., Williams, D. (2015). The Trojan Player Typology: A cross-genre, cross-cultural, behaviorally validated scale of video game play motivations. *Computers in Human Behavior*, 49, 354-361. **Journal article**

Logas, H., Vallejos, R., Osborn, J. C., Compton, K., Whitehead, J. (2015). Visualizing Loops and Data Structures in Xylem: The Code of Plants. *Fourth International Workshop on Games and Software Engineering.*

Osborn, J. C., Samuel, B., McCoy, J. A., Mateas, M. (2014). Evaluating Play Trace (Dis)similarity Metrics. *Tenth Artificial Intelligence and Interactive Digital Entertainment Conference.*

Osborn, J. C., Mateas, M. (2014). Visualizing play traces of arbitrary games. *Foundations of Digital Games.*

Logas, H., Whitehead, J., Mateas, M., Vallejos, R., Scott, L., Murray, J., Compton, K., Osborn, J. C., Salvatore, O., Shapiro, D., Lin, Z., Sanchez, H., Shavlovsky, M., Cetina, D., Clementi, S., Lewis, C. (2014). Software verification games: designing Xylem, the code of plants. *Foundations of Digital Games.*

Osborn, J. C., Grow, A., Mateas, M. (2013). Modular computational critics for games. *Ninth Artificial Intelligence and Interactive Digital Entertainment Conference.*

Compton, K., Osborn, J. C., Mateas, M. (2013). Generative methods. *Fourth Workshop on Procedural Content Generation in Games.*

Kahn, A. S., Shen, C., Lu, L., Ratan, R. A., Coary, S., Hou, J., Meng, J., Osborn, J. C., Williams, D. (2013). The Trojan player typology: a cross-genre, cross-cultural, behaviorally validated scale of video game play motivations. *Annual meeting of the International Communication Association.*

Osborn, J. C. (2011). Supervision match: procedural minimalism. *DiGRA Conference 2011.*

Copier, M., Swain, C., van den Berg, L., Osborn, J. C., Taylor, B. (2010). So happy together: Tips and tricks for global collaboration between universities and the industry. *Game Developers Conference 2010, IGDA Education Summit*.

Bolas, M., Olson, J.L., Osborn, J. C., Bolas, N. (2010). Design Approach for Multi-touch Interfaces in Creative Production Environments. *Engineering Patterns for Multi-Touch Interfaces 2010 Workshop, 2010 ACM SIGCHI Symposium on Engineering Interactive Computer Systems.*