

# 2nd AIIDE Workshop on Experimental AI in Games

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The 2nd Experimental AI in Games (EXAG) workshop brings together both the 2014 EXAG and 2013 AI & Game Aesthetics workshops at AIIDE under a unified banner, with the aim of fostering innovation in how AI is used in and for games. We affectionately describe the workshop as a celebration of ‘half-working things and half-baked ideas’. Games are growing broader and more experimental with each passing year, and academia must match this pace in order to remain ahead of the technological curve. EXAG aims to bridge the two extreme ideals of academia research: unstable, bleeding-edge ideas about the future of games, and useful, practical research embedded into playable experiences. We are interested both in new ideas that have not yet found a place in conference-level research, and in concrete examples of new kinds of gameplay experience made possible through academic research. EXAG accepted twelve papers and three tutorials for its two-day workshop, along with numerous playable demonstrations. We provide a summary of some of the workshop’s themes below.

Two papers addressed the new idea of player vision influencing content generation. Jonathan Tremblay and Clark Verbrugge (McGill University) presented work on placing decorative content in game levels based on areas that a player traversing a level would always see, sometimes see, or never see. Meanwhile, Michael Cook (Falmouth University) presented a system which generated level geometry based on pre-defined areas that should be visible (or not) to the player.

Vital work on analyzing player relationships with their avatar was presented by Dominic Kao and Fox Harrell (MIT) with studies on how player avatars impact performance and engagement in a game. This work was complemented by the work of Chong-U Lim and Fox Harrell (MIT) which investigates how character customization can offer insights into a player’s implicit perception of themselves and others. Both papers have major future ramifications for game designers of all genres.

This year’s workshop had a strong dedication to producing playable experiences embodying a research idea. James Owen Ryan, Adam Summerville, Michael Mateas and Noah Wardrip-Fruin (UC Santa Cruz) described work on an AI framework modeling knowledge transfer intended to breathe new life into open world games. Martin Černý (Charles University in Prague) presented *Sarah And Sally*, a puzzle game where NPC companions are neither too pushy nor too distant. Studies on player reactions to the NPC fostered discussion on how players relate to AI companions.

Multiple papers presented new perspectives on generating game content. Adam Summerville (UC Santa Cruz) presented two approaches to using machine learning from existing human designs to generate new content. One used Markov chains guided by Monte-Carlo Tree Search (co-authored with Shweta Philip and Michael Mateas of UC Santa Cruz) for Mario levels, and another used Bayes nets and principal component analysis for Zelda dungeon generation (co-authored with Michael Mateas of UC Santa Cruz). Dan Ventura showed work co-authored with Dean Lebaron and Logan Mitchell (Brigham Young University) on a game which invents game rules and levels using a combination of Q-learning and evolution. We hope to see more blended approaches to procedural content generation in future workshops.

Not all submissions fit neatly into a theme, but they still provided stand-out presentations and food for thought. Antonios Liapis (University of Malta) showed how the Sentient Sketchbook had benefited from becoming a live web service, and argued for AI services as a future trend in content generation. Jeremy Gow and Joseph Corneli (Goldsmiths University) presented a technique for blending two game designs, including an impressive demonstration of Frogger-Meets-Zelda ‘Frolda.’ Finally, Ian Horswill (Northwestern University) spoke passionately about a mixed-initiative tool to generate scenarios in the improv role-playing game *Fiasco*.

EXAG also hosted tutorials, demonstration sessions, some game development sessions in the evening, and some thought-provoking boardgame sessions. The workshop has gone from strength to strength over the past few years and we look forward to the future. EXAG was chaired by Antonios Liapis, Michael Cook and Alexander Zook; the papers of the workshop were published as AAAI Press Technical Report WS-15-21.