

Preface

Welcome to the Tenth AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE-14)! Interactive digital media forms, such as games, are an important part of our society. Beyond entertainment, interactive and collaborative digital media creates social bonds between people by providing a shared reality for people separated in time and space. Interactive media is increasingly used in education and in ameliorating the cognitive and physical health of the players. Collaborative media interactions can incentivize crowds of players to solve difficult problems, and researchers now leverage virtual worlds to serve as a research laboratory for understanding human behavior.

With the increasing amount of data available on human behavior within these systems we have an opportunity to create rich models of various aspects of behavior, such as emotion, skill, and social preferences. Generative algorithms have the capability to open up novel design spaces of interaction. This field opens up significant new challenges for AI systems in their quest to achieve human-level intelligence. Artificial intelligence in the context of human entertainment reveals difficult challenges for researchers and developers that are not found in other application domains. These challenges include: creating believable opponents and companions; interactive storytelling; procedural content generation; player modeling and game analytics; path planning; and developing tools and representations that empower designers to bring their visions to life.

The computer games industry, the dominant interactive media form in today's society, has become a multibillion-dollar commercial enterprise, comparable in size and scope to the film industry. Game system requirements are an important driver of hardware and software innovation in the computer industry, and games have expanded to fill

market niches opened by new platforms such as mobile phones, consoles, tablets, and social media. Artificial intelligence is a major component contributing to this success, creating the conditions for more complex virtual environments, realistic non-player characters, and engaging experiences.

The core mission of AIIDE is to provide a venue for industry developers and academic researchers to exchange ideas, challenges, and solutions. The scope of the AIIDE conference ranges from the application of artificial intelligence to computer games all the way to tackling fundamental questions of how intelligent systems can facilitate the entertainment of humans.

One of the highlights of AIIDE is a series of keynote talks by prominent industry professionals and academic researchers. Continuing for a second year, AIIDE featured a playable experiences track that showcased fully realized games with significant AI that formed an integral part of player experience.

These talks and panels frame a peer-reviewed group of 14 research paper presentations (approximately a 26 percent acceptance rate). In addition, AIIDE includes a poster and demonstration session of 15 peer-reviewed papers, one demonstration abstract, and seven playable experiences. Graduate students had the option of submitting extended abstracts to the Third AIIDE doctoral consortium. This year's doctoral consortium selected 5 students to present their research proposals at the conference and were each assigned a senior researcher as their mentor.

We would like to thank the members of our Program Committee for their dedicated reviewing service and the Advisory Committee for their continued involvement in guiding the conference. North Carolina State University served as the gracious host for the 2014 conference, enabling us to bring AIIDE to the southeast for the first time. The con-

ference would not have been possible without the dedicated AAAI Staff, particularly Carol McKenna Hamilton and Keri Harvey, who helped organize the conference and are always a pleasure to work with.

- Ian Horswill, *Conference Chair*
(Northwestern University)
- Arnav Jhala, *Program Chair*
(University of California Santa Cruz)
- *Organizing Committee*
Kevin Dill, Jeff Orkin, Noor Shaker, Mei Si,
Nathan Sturtevant, R. Michael Young

AIIDE 2014 StarCraft Competition

In 2014, AIIDE will host the Fifth Annual StarCraft AI Competition. Participants are given the task of building the best performing AI system for the popular real-time strategy game *StarCraft Brood War* (Blizzard Entertainment). The goals of the competition are to provide a testbed for real-time AI systems and to promote game AI research by exhibiting AI techniques such as scripting, planning, optimization, spatial reasoning, and opponent modeling in a fast-paced popular video game.

This year's field includes 19 entries from several universities and independent *StarCraft* enthusiasts. They will play complete games of *StarCraft Brood War* in a tournament environment similar to those used by professional gamers. To further replicate the conditions of professional play, AI systems are allowed to memorize past encounters with opponents from which to learn and adapt to opponent strategies. We will utilize 20 lab computers and tournament scheduling software to play as many as

200 games per program pair in round-robin fashion to increase the statistical significance of the tournament results. To promote the development of strong AI systems for real-time strategy games, we will make the source code of tournament entries available to the public at the conclusion of the tournament. This is intended to lower the bar for new entrants to join future competitions, increase the accessibility of AI systems, and promote the exchange of ideas.

Complete information about the tournament can be found at starcraftaicompetition.com

- Michael Buro, *Competition Cochair*
(University of Alberta, Edmonton, Canada)
- David Churchill *Competition Cochair*
(University of Alberta, Edmonton, Canada)