

Call for Papers: Special Issue on AI-based and AI-assisted Game Design

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Artificial and Computational Intelligence (AI/CI) methods have recently shown great potential in generating complete games, in enriching existing games and in assisting humans in the design of games. There is an ambitious, and nevertheless established, interest within both academia and industry for autonomous or semi-autonomous generators of game elements such as dungeons, weapons, creatures, NPCs, etc. In addition, the use of AI/CI techniques for designing better game levels, game mechanics, game visuals, game audio or game narrative has attracted a strong following with increasingly rigorous methods of evaluation. While one core research focus is on the design of complete games generated entirely by computational creators (AI-based), a more human-centric aspiration targets the creation of computer-aided design tools that use AI/CI methods to enhance the experience of human designers, to speed up content creation for expert game developers or to promote the creativity of design novices (AI-assisted). Recent years have seen several attempts both at AI-based design of complete games, and at the creation of AI-assisted design tools for game developers. Both AI-based and AI-assisted game design methods are inspired by, and often attempt to replicate, the creative process and preferences of human game designers; AI-based and AI-assisted game design is therefore at the intersection of artificial intelligence, computational creativity and genuine design concerns.

This special issue aims to motivate further research in these directions and welcomes submissions in the area of AI-based and AI-assisted game design. Topics include but are not limited to:

- AI/CI methods for generating facets of games such as levels, mechanics, audio, game-play behavior and narrative; either autonomously or in collaboration with designers.
- AI/CI methods that fuse the generation of multiple game facets/domains.
- AI/CI methods for generating complete games.
- AI/CI methods for evaluating existing or generated games.
- AI/CI methods for discovering common patterns of existing or generated games.
- AI/CI methods for adjusting the rules, levels, or other core game components based on a player's experience.
- Tools for game design (or asset design) which make use of artificial or computational intelligence.
- Methods that replicate human design processes by computers.
- Models of designer aesthetics, style, goals and processes.
- Models of human creativity in AI-assisted or AI-based design.
- Models of computational creativity in human or AI-assisted game design.