

Automation of AAA Game Development using AI

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Abstract : The goal of this project was to evaluate and document the capabilities and limitations of AI tools for empowering small teams to create high-budget, high-profile (AAA) 3D games typically developed by large studios. Two teams of novice game developers attempted to create two different games using AI and Unreal Engine 5.3. First, the teams evaluated 60 AI art, design, sound, and programming tools by considering their capability, ease of use, cost, and license restrictions. Then, the teams used a shortlist of 12 AI tools for game development. During this process, the following tools were found to be the most productive: (i) ChatGPT 4.0 for both game and narrative concepts and documentation; (ii) Dall-E 3 and OpenArt for concept art; (iii) Beatoven for music drafting; (iv) ChatGPT 4.0 and Github Copilot for generating simple code and to complement human-made tutorials as an additional learning resource. While current generative AI may appear impressive at first glance, the assets they produce fall short of AAA industry standards. Generative AI tools are helpful when brainstorming ideas such as concept art and basic storylines, but they still cannot replace human input or creativity at this time. Regarding programming, AI can only effectively generate simple code and act as an additional learning resource. Thus, generative AI tools are, at best, tools to enhance developer productivity rather than as a system to replace developers.

Keywords : AAA games, AI, automation tools, game development

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