

Gaming Meets Robotics: Robotic Simulations

🕒 READ TIME: 2 MINS

👥 AUDIENCE: BUSINESS & TECHNOLOGY

At first glance, gaming and robotics are thought of as 2 unrelated fields. However, they have much more in common than the public would think. In this article, we will focus on how developments in gaming have been valuable towards the robotics field, especially from the point of view of simulations.

GAME ENGINES AND SIMULATIONS

To start, let us talk about game engines. These software applications give a variety of tools to help the user create their own video games, such as to create objects and program them, apply textures and more. One example of a popular game engine is Unity.

A notable feature of Unity is its “asset store”. Which contains a variety of assets that have been created and shared by its community across the years. This allows the game creator to re-use assets for their own projects, reducing workload to create new ones. Likewise, if we import the right assets such as furniture, humans, and the right textures, we can recreate rooms that replicate houses and office locations. Therefore, this can be useful to test autonomous robots that are focused on giving human services, such as testing obstacle avoidance for autonomous vacuum cleaners. This

usage has been so common, that Unity even made its own extension to allow easier integration. Such as the URDF extension tool for importing custom-made digital models of robots.

Moreover, robotic simulations are key to experimenting robotic designs for industrial factories. It is easier to visualise real-time movements of robotic arms, see how far these arms can reach, and making sure that one robotic arm does not collide with another within an autonomous factory environment. It also plays a key role in marketing the arms to the public, by giving a presentation of how the robot would perform in each simulated scenario.

Game Engines and Simulations

ADDITIONAL APPLICATIONS

Aside from robotic simulations, the gaming industry has helped engineers to develop better control systems. For example, gamepad controllers are designed in the mind of ergonomics, making controls look easy whilst being comfortable to hold during gameplay. In fact, many engineers buy these gamepads to control their own robots during development.

CONCLUSION

In conclusion, gaming offers a unique and powerful tool for advancing the field of robotics. By providing a platform for testing, development, and public engagement, it has the potential to unlock new and exciting possibilities for robotic research and applications.



ABOUT THE AUTHOR

Sowrab Chowdhury

Sowrab Chowdhury is a final year undergraduate computer science student from King's College London. Sowrab has worked with a robotics research team at King's as an intern, and is also part of King's College London's Robotic society, providing weekly Arduino workshops to students who are new to the world of electronics.