NANYANG TECHNOLOGICAL UNIVERSITY
SINGAPORE

School of Computer Science and Engineering
College of Engineering

Virtual Reality (VR) Game

Collision Detection in Virtual Pool 3D Game

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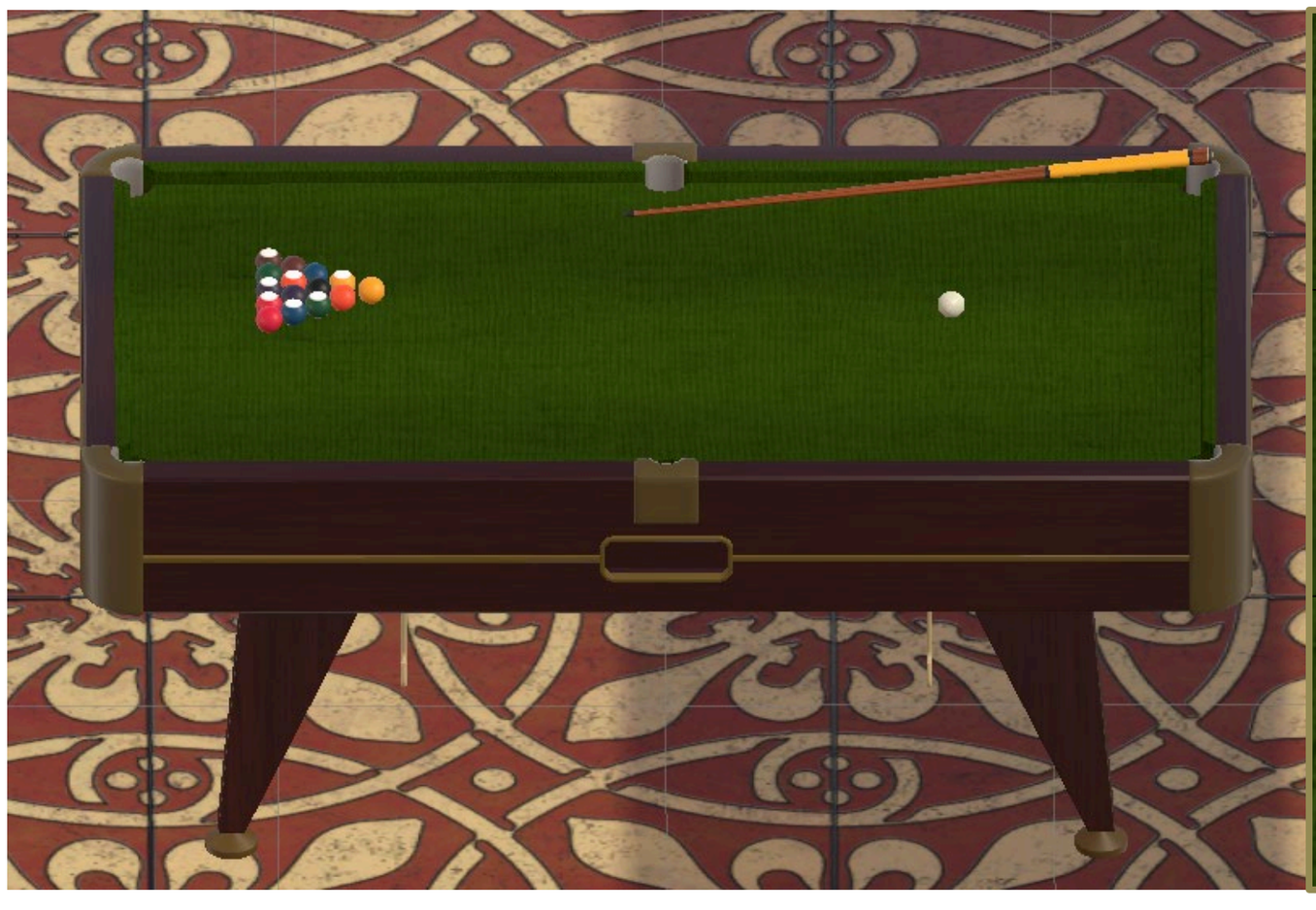

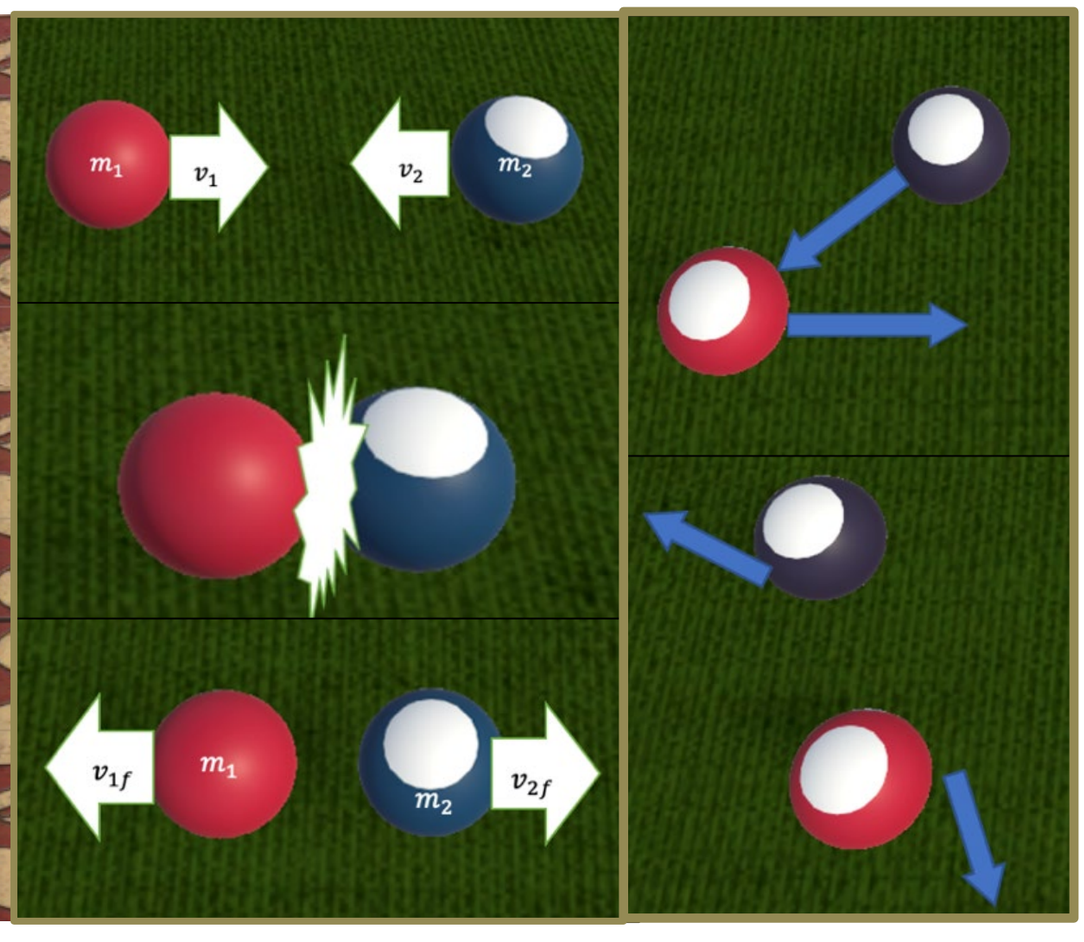

Project Objectives:

A new algorithm for continuous dynamic collision detection is developed for VR pool games. The sweep-based 3D physics is applied to the cue ball and object ball movements, which ensures that the fast-moving balls collide with each other. Also, The Time-of Impact algorithms are exploited to compute potential collisions for an object by sweeping its forward trajectory using its current velocity. Experimental results are presented in an immersive and interactive virtual pool environment, showing comparative advantages of accuracy in ball trajectory generations over the existing methods.

VR places the user inside an immersive experience. Instead of viewing a screen in front of them, users are immersed and able to interact with the 3D worlds. With more accurate computing technologies for simulating vision, hearing and touch, the computer is transformed into a gatekeeper to this artificial world

Immersive Virtual Pool Environment