

Simpedia™

High-Fidelity, Real-Time Physics Simulation

Behind great robotics teams are great simulators.

Extensive use of simulation lends itself to cost and time-efficient prototyping, increases confidence in the robot's control, and is a method of assessing feasibility, reliability and safety, especially if the simulation contains realistic and accurate physical modeling.

In simulation, control systems can be tested quickly, inexpensively, and without risk to people or hardware. This allows the robotics engineer to focus on the control problem. Vecna has developed the industries best real-time high-fidelity simulator for robotic systems. The simulator, runs in real-time on modest hardware. The simulator is capable of accurately modeling interactions between elements in the environment, gravity, and the robot.

With significant attention paid to a user-friendly interface, a general robotic platform (car, wheelchair, motorcycle) could be outfitted with customizable actuators and simulated on-board sensors (LIDAR, 2- or 3-D vision, sonar, tactile) providing feedback to the control law. The robot's algorithms dictate how the model moves in response to the sensors' data. Additional information, such as stress and strain data, may be logged to inform the engineer of hardware design issues. Simpedia is able to import terrain databases like those used in video games, and an easy click-and-drag interface makes it easy to layout a customized obstacle course.

Simulation data can be post processed to provide photo realistic animations of your robot interacting with real-world scenes. This provides compelling evidence to sponsors as well as valuable video for media attention.



VECNA ROBOTICS
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