

Instead, the virtual projection of the acceleration due to gravity through the reversal of cell phone gesture to in the phone screen space coordinate system x-y plane. So that the main calculation is how the phone along the direction turned the angle of switching back. Here, you need to pay special attention to restore order along the three spatial directions, Yaw, Pitch and Roll axis of the rotation angle. This algorithm, the order must be for Yaw, Pitch and Roll. Through the icon below, these three axes of the angle of recovery instructions. Initial state as shown in Figure 6, the phone has three axes of rotation.

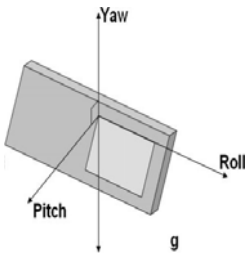


Fig. 6 Rotation initial State

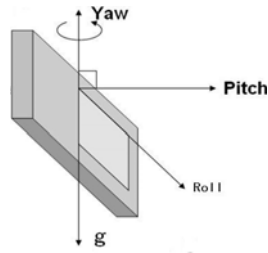


Fig. 7 Yaw Axis Recovery

Of course, Yaw axis always points to the vertical upward direction, Z-axis coordinate system and the standard space, it can be a negative directly to the rotation angle of the angle recovery, shown in Figure 7.

Along with the Yaw axis turned the angle, Pitch axis at this time becomes space coordinates in the x-axis shown in Figure 7.

Along with the Pitch axis (it has become a space coordinate system x-axis in this case) turned the angle of recovery, the Roll axis on the amendments to the y-axis in order to space coordinates, shown in Figure 8. Finally, according to the y-axis will be turned to the angle of recovery, then the phone screen where the plane becomes the space coordinates in the x-y plane, attached to the acceleration of gravity in the plane of cell phone is a phone plane intersecting vectors which shown in Figure 9.

Later, projecting the vector onto the phone plane, and calculating the ball rolling direction through the projection point. If you do not change the angle in accordance with the above order recovery, the calculation of the spatial coordinates of conversion would be very complicated. Each step of the angle of recovery is based on the standard spatial coordinate system axis.

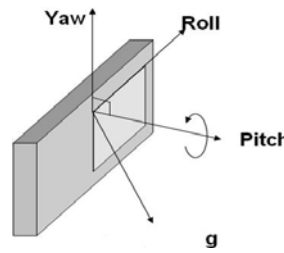


Fig. 8 Pitch Axis Recovery

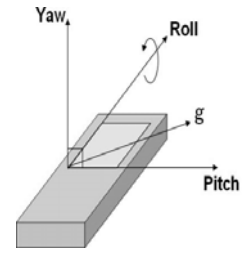


Fig. 9 Roll Axis Recovery

V. THE RESULTS OF THE EXPERIMENTS

Run the game, the Welcome screen showed in Figure 10. Click the Start button, and enter the loading interface.



Fig.10 The Running of the game

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REFERENCES

- [1] Yafeng Wu, Yaguang Shu. 2010, Android2.0 game developers combat Collection. People's Posts and Telecommunications Press.
- [2] Zhi-Long Yu, Yu-Hsun Chen, Mingjie Zheng, and Xiaofeng Chen. 2009, the complement of the development of the Android SDK example. People's Posts and Telecommunications Press, July 2009.
- [3] Yan Jin, Shanglong Yao. 2009, Google Android SDK Getting Started with the actual combat. People's Posts and Telecommunications Press,
- [4] Fengsheng Yang. 2010, Uncover the secrets of the Android application development, Mechanical Industry Press,
- [5] Super Korea, Quan Liang, 2010, the principles and development points of the Android system. Press of Electronics Industry,
- [6] Ai Shier (U.S.), 2007, Thinking in java. The fourth Edition. Mechanical Industry