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Rotations via Quaternions and Interpolation.

In computer animations cameras need to move and rotate through a scene and rotate about their own axes as they move through the scene. In this talk we shall look at quaternions for rotating objects in 3-dimensional space. We shall create a camera which can rotate about a scene as well as rotate about its own axes by taking a product of quaternions. Quaternion interpolation and back-face culling via cross and dot products will also be discussed. The above concepts will be illustrated with movies generated by graphics programs such as Flash, Poser, Swift3D, Studio 3D Max, Maya, and Carrara. (Received August 23, 2010)