MCG - 15

Interpolation of rotation.

p and q: rotation quaternions.

Spherical linear interpolation:

Determine the angle θ between p and q from $\cos\theta = p \cdot q$ (dot product of p and q).

Then the interpolation can be computed as follows:

$$\text{slerp}(p, q, t) = \frac{\sin((1-t)\theta)p + \sin(t\theta)q}{\sin(\theta)}.$$

Linear interpolation:

Let

$$r = (1 - t)p + tq.$$

Then we get the linear interpolation by normalizing r:

$$\mathsf{lerp}(p, q, t) = \frac{1}{||r||}r.$$