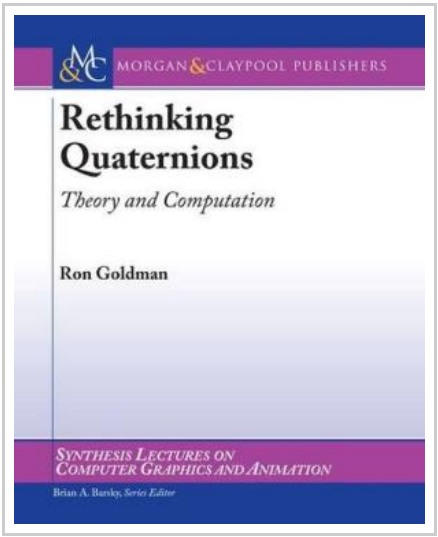


DOWNLOAD

Rethinking Quaternions: Theory and Practice (Paperback)

By Ron Goldman

Morgan Claypool Publishers, United States, 2010. Paperback. Book Condition: New. 232 x 192 mm. Language: English . Brand New Book. Quaternion multiplication can be used to rotate vectors in three-dimensions. Therefore, in computer graphics, quaternions have three principal applications: to increase speed and reduce storage for calculations involving rotations, to avoid distortions arising from numerical inaccuracies caused by floating point computations with rotations, and to interpolate between two rotations for key frame animation. Yet while the formal algebra of quaternions is well-known in the graphics community, the derivations of the formulas for this algebra and the geometric principles underlying this algebra are not well understood. The goals of this monograph are to provide a fresh, geometric interpretation for quaternions, appropriate for contemporary computer graphics, based on mass-points; to present better ways to visualize quaternions, and the effect of quaternion multiplication on points and vectors in three dimensions using insights from the algebra and geometry of multiplication in the complex plane; to derive the formula for quaternion multiplication from first principles; to develop simple, intuitive proofs of the sandwiching formulas for rotation and reflection; to show how to apply sandwiching to compute perspective projections. In addition to these theoretical issues, we...

READ ONLINE
[7.06 MB]

Reviews

Very good e book and helpful one. it was writtern quite properly and helpful. I am quickly could possibly get a enjoyment of looking at a composed book.

-- ***Connor Lowe IV***

If you need to adding benefit, a must buy book. it absolutely was writtern extremely flawlessly and valuable. Once you begin to read the book, it is extremely difficult to leave it before concluding.

-- ***Mrs. Odie Murphy II***