

Oriented Conformal Geometric Algebra

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Abstract. In [16] Stolfi developed a complete theory of *Oriented Projective Geometry*. He showed that assigning meaning to the sign of an otherwise homogeneous representation of geometry could provide a multitude of benefits. This paper extends his work by applying the same approach to Conformal Geometric Algebra. Oriented Conformal Geometric Algebra allows intuitive manipulation of such concepts as half-spaces, inclusion within geometric entities and ordered intersections. It also illustrates the non-commutative nature of the meet. The paper concludes with some examples of applications in which Oriented Conformal Geometric Algebra is already providing benefits.

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