Bijective Digitized Reflections and Rotations using Geometric Algebra

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Résumé

In this presentation, I will focus on 2D bijective digitized rotations and reflections for applications related but not limited to image processing. The chosen framework is geometric algebra since it allows to reformulate and redefine problems involving geometric transformations in a more intuitive and general way. After defining the digitization through geometric algebra, I will explain the characterization of the set of bijective digitized reflections in the plane. Since any rotation is represented as the composition of two reflections, compositions of bijective digitized reflections result in new bijective digitized rotations. I will show some experimental results to compare our new digitized transformation to the digitized rotations.

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