A GEOMETRIC ALGEBRA APPROACH TO SOME PROBLEMS OF ROBOT VISION

Gerald Sommer
Institut für Informatik und Praktische Mathematik
Christian-Albrechts-Universität zu Kiel, Kiel, Germany
gs@ks.informatik.uni-kiel.de

Abstract Geometric algebra has been proved to be a powerful mathematical language for robot vision. We give an overview of some research results in two different areas of robot vision. These are signal theory in the multidimensional case and knowledge based neural computing. In both areas a considerable extension of the modeling has been achieved by applying geometric algebra.

Keywords: Clifford algebra, Clifford spinor neuron, geometric algebra, hypersphere neuron, monogenic function, neural computing, Poisson scale-space, robot vision, signal theory.