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Sommario/riassunto	Long description: The dissertation mainly studies a novel method of subpixel stereo vision for Electronic cluster eye (eCley), a state-of-the-art artificial superposition compound eye with super resolution. In the whole thesis, The author mainly deduce the mathematical model of stereo vision in eCley theoretically based on its special structure, discuss the optical correction and geometric calibration that are essential to high precision measurement, study the implementation of methods of the subpixel baselines for each pixel pair based on intensity information and gradient information in transitional areas, and eventually implement real-time subpixel distance measurement for objects through these edge features. To verify the various methods adopted, and to analyze the precision of these methods, experiments are implemented in many practical scenes. This stereo vision method extends the ability of perceiving 3D information in eCley, and makes it applicable to more comprehensive fields such as 3D object position, distance measurement, and 3D reconstruction.