A PROBABILISTIC APPROACH TO BOUNDARY HANDLING (WedAmOR4)

Author(s) :

Anil Anthony Bharath (Imperial College London, United Kingdom)
Jeffrey Ng (Imperial College London, United Kingdom)

Abstract :

We address the problem of boundary handling in correlation−based template matching by proposing a probabilistic model of the detection process. Whilst our approach bears similarities to those taken in deriving results in matched and subspace signal detection, it offers a new interpretation: that a dual correlator architecture provides a systematic way of handling general uncertainty, and, more specifically, the boundaries of data in signals. We also provide an extended model to deal more effectively with amplitude variations of target with respect to template. These improvements have immediate applications not only in classical matched signal detection, but also for template matching by correlation in digital image analysis and computer vision, where partial target occlusion at image boundaries remains a significant problem.

Menu