Distributed Smart Cameras
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We have developed over the years several distributed smart camera systems [Lin06, Vel08]. We believe that distributed algorithms are required to scale problems stemming from multiple cameras up to the number of cameras required to understand interesting scenes. We believe that distributed algorithms, real-time operation, and low power must be considered as first-class design goals, not tossed over the fence as an implementation detail.

Several research problems must be addressed to build useful distributed smart camera systems:

• Message-passing algorithms for problems like tracking that have known behavior in terms of message complexity, convergence, etc.
• An understanding of the relationship between low power operation and distributed algorithms.
• Load balancing in real-time distributed systems.
• Multi-band and multi-modal sensor fusion.
