Real Time, Real World, Distributed Vision

Peter J. Burt
Vision Technologies Laboratory
Sarnoff Corporation, USA

pburt@sarnoff.com

Abstract

The science and art of computer vision has matured over the past several years to the point that vision systems can guide robotic vehicles in real time through complex natural outdoor environments. Capabilities have been developed to analyze scene structure from on-board moving video cameras, maintain precision vehicle location and pose, and, not least, provide high performance, low latency vision processing within the vehicle control loop. I will describe contributions made at Sarnoff to these achievements. Current capabilities mimic a humans ability to navigate using his own eyes for visual guidance. I will also describe our work leading to future capabilities in which robots can share the eyes of other robots to achieve distributed vision and iconic memory of the world they move through.